UNIVERSITY OF ALBERTA

CHILDREN'S PERCEIVED COMPETENCE AND PARTICIPATION IN RECESS ACTIVITIES

BY

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©

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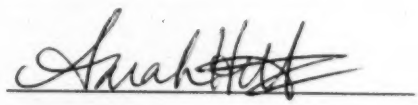

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ABSTRACT

This study was developed in order to learn more about the relationship between children's perceptions of competence and importance on playground activities and the activity choices they make. The stability of the children's perceptions of competence and gender differences among the above-mentioned constructs were also investigated. Finally, the viability of self-administration of the Activities of Daily Living - Physical Play (ADL – PP) instrument by children in a grade three/four class (N = 7 males, 7 females) was assessed.

Results showed that children held significantly higher perceptions of competence and importance for activities in which they engaged compared to activities never chosen. This relationship became increasingly evident when activity was monitored for more time. Competence perceptions remained stable over the study duration (3 weeks) with boy's perceptions of competence higher than girl's for activities never chosen. Children this age were able to self-administer the ADL - PP while maintaining accuracy.

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled **Children's Perceived Competence and Participation in Recess Activities** submitted by **Sarah Elizabeth Hilton** in partial fulfillment of the requirements for the degree of **Master of Arts.**

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CHAPTER 1

Introduction

Recess is seen by many children as a break from the structured setting of the school classroom. Although generally restricted to fifteen-minutes, children find a way to participate in a variety of different activities over the course of recess. A unique aspect of recess is that the availability of numerous different activities on the school playground leaves children faced with many choices. Faced with such options, the reasons why one makes the decisions that he or she does differ across individuals. It may appear that such choices are whimsical or spontaneous. However, some theorists claim that there are identifiable constructs that eventually lead to achievement behaviours such as choice to engage or not engage in activities. This study was an exploration of the relationship between these constructs and children's activity choices made on the school playground at recess.

Several theoretical models identify perceived competence as a mediator of future choice (e.g. Eccles et al., 1983; Harter, 1978; Nicholls, 1984). This construct of perceived competence can be defined as an individual's *interpretation* or self-assessment of his or her success in domain-specific skills. Within each domain, it is seen as an important mediating factor in determining whether a person chooses to continue to participate in certain activities (Yun & Ulrich, 1997). This theorized relationship between self-assessment and motivation has been supported within both academic and sport settings (Eccles (Parsons), 1984b; Roberts & Duda, 1984; Roberts, Kleiber & Duda, 1981). Research conducted with children has shown that perceptions of competence are relevant to performance as early as kindergarten

(Eccles, Wigfield, Harold & Blumenfeld, 1993; Harter & Pike, 1984; Marsh, Craven & Debus, 1991). Such perceptions apply to a wide variety of dimensions (e.g. intellectual, social, physical) and settings (e.g. school, home, team). Among these settings are those which are relatively structured and formal such as the classroom. However, these are likely not the only contexts in which competence is valued. Very little research has been conducted in informal and less structured settings such as the school playground during recess. Thus, the role of perceived competence in decision making among children engaged in free play remains relatively unknown. Watkinson, Causgrove Dunn, Cavaliere & Hilton (2000) conducted a study investigating children's perceptions of competence on specific activity choices made at recess. However, the relationship between perceptions of competence and choice was not examined. This examination showed that children do hold specific competence beliefs for specific activities commonly done at recess.

In addition to perceived competence, the Expectancy-Value Theory (Eccles et al., 1983) claims that the degree to which a task is valued is also directly related to one's achievement behaviours (e.g. choice). Within this study the relationship between the value construct of perceived importance and activity choice was of particular interest. Perceived importance is an individual's belief concerning how important it is to do well on a particular task (attainment value) (Eccles et al., 1983). The relationship of this construct to choice has also been investigated in formal, structured settings such as competitive sports, but again there has been little research done on a free choice setting like the playground at recess.

This study was developed in order to learn more about the relationship of children's perceptions of competence and importance on playground skills to the activity choices they actually make. Firstly, specific physical activity perceptions of competence were identified and assessed for each child participating. Secondly, specific activity perceptions of importance were obtained for each child. Thirdly, the activity choices made by the children during recess over an extended number (approximately 22-24) of recess periods were tracked and an analysis was completed to determine the relationship between perceptions of competence and importance to activity choices made at recess.

This study was intended to extend the models of Eccles et al. (1983) and Harter (1978) that contend choice is predicted by one's perceptions of ability/competence and subjective task values, to the school playground therefore yielding a better understanding of what motivates children's behaviour in a free choice setting. Generally, children from pre-school through elementary have recess as a scheduled part of their day. It is an environment in most children's lives where they are faced with vast opportunities for choice relatively unfettered by adult prescription. Investigating the factors which influence these choices should reveal what motivates children's behaviour, therefore allowing the fostering of environments that are conducive to high levels of motivated activity among children. The work of Eccles and Harter provide some direction for looking at this relationship.

Purpose of the Study

The primary purpose of this study was to determine the relationship between children's perceptions of competence on a variety of playground activities and

engagement in those activities during recess. Through the use of Watkinson and Causgrove Dunn's (1999; Watkinson et al., in press) Activities of Daily Living – Physical Play report form (ADL – PP) and Perceptions of Competence Questionnaire it was intended to test components of both Eccles et al.'s (1983) and Harter's (1978) models of achievement motivation. Specifically, the relationship between perceptions of competence and activity choices made on the school playground at recess was investigated. Research with the ADL - PP described specific activity choices made by each child while on the playground during recess. The results were expected to indicate the extent to which children on the playground did, during recess, participate in those activities in which they felt they were competent and avoided those activities in which they did not.

In addition to perceptions of competence, the relationship between perceived importance and activity choice on the school playground was also studied. This was a second purpose of this study. This required the development of an instrument that would measure each participant's perceived importance on specific activities done on the school playground at recess. It was anticipated that those activities chosen and engaged in by the participants would be perceived to be important.

In addition, in research thus far there has been insufficient information surrounding the stability of perceptions of competence. The third purpose of this study was to address the stability of an intact group of children's perceptions of competence over three separate measurements. The collection of perceptions of

competence scores over a span of several weeks allowed for the investigation of the construct stability.

The existence of gender differences among perceptions of competence and importance were also investigated in the following study. Previous research disclosed that usually boys maintain higher perceptions of physical competence than do girls. In the area of perceived importance, gender differences have been shown to exist with the perceptions of males and females differing depending on activities or settings investigated.

Finally, there was a methodological purpose to this study. The use of any self-report instrument must be carefully monitored. This may be especially true when those completing the instrument are children. The ADL - PP self-report instrument (Watkinson & Causgrove Dunn, 1999; Watkinson et al., in press) has been employed with children but always under heavy guidance by adults. If it is to be employed in the future it may be that children can take more responsibility in completing the items, especially if doing so repetitively. This, of course would only be viable if there is no significant loss of accuracy in the information provided. Thus, the efficacy of children self-administering the ADL - PP instrument required investigation. A final purpose of this study was to determine the viability of self-administration of the ADL - PP instrument over an extended period of time.

Delimitations

The following were delimitations of this study:

1. Subjects in this study came from one intact grade 3-4 classroom. This age group was chosen as research has demonstrated that by the third and fourth grade, perceptions of competence were much more accurate than those of very young children.
2. Perceptions of competence were measured by administration of Watkinson & Causgrove Dunn's (1999; Watkinson et al., in press) Perceptions of Competence Questionnaire.
3. Activity choice patterns were assessed using Watkinson & Causgrove Dunn's (1999; Watkinson et al., in press) ADL – PP self-report form.
4. The validity of recess activity choices as assessed by the above instrument was established by direct observation of children by trained observers. Interobserver agreement levels were required to exceed 85%.

Limitations

The following were limitations of this study:

1. The amount of data collected over the 3-week period from each participant was limited by subject attendance. Although a total of 28 testing sessions took place, no more than a few sessions were missed by any given participant.
2. Certain school functions that took place throughout the data collection phases resulted in some variation in the amount of data collected during each weekly phase.

3. The validity of the information provided by the participants was limited by the capacity of the children to supply accurate and honest responses. This is a limitation found to be inherent with the use of self-report instruments. Random observation sessions were employed to monitor response validity.
4. The activity choices reported by the subjects may have been influenced by the research assistants observing their activity patterns out on the playground during the recess periods.

Definitions

For the purpose of clarity regarding the area of perceived physical competence and achievement motivation, listed are some definitions that have commonly been used.

Ability/competence beliefs: "children's evaluations of their competence in different areas" (Wigfield, 1994, p. 53). Broad beliefs concerning competence within a given domain or on more specific activities or tasks.

Achievement motivation: the area of study that investigates what mediates individual's motivation to achieve.

Achievement setting: an environment or setting where achievement is sought.

Achievement task: a task, challenge or activity that requires an attempt to achieve. In this study these tasks were assessed by use of the Watkinson & Causgrove Dunn (1999; Watkinson et al., in press) ADL – PP report form.

Competence: one's success in meeting task demands (Coopersmith, 1967).

Expectancies: Atkinson defines these as an "individual's anticipations that their performance will be followed by either success or failure" (as cited in Wigfield, 1994, p. 50).

Expectancies for success: "children's beliefs about how well they will do on an upcoming task" (Wigfield, 1994, p.52).

Perceived ability: usually thought of as a specific statement of competence that is restricted to a limited set of behaviours. E.g. playing basketball, doing mathematics (Fox, 1997). For the purposes of this study the term perceived ability was used interchangeably with perceived competence.

Perceived competence: a statement of personal ability that generalizes across a domain such as work, or sport (Fox, 1997). An individual's *interpretation* of his or her success in domain-specific skills (Markus, Cross & Wurf, 1990). In this study this was assessed by the scores on the Perceptions of Competence Questionnaire (Watkinson & Causgrove Dunn, 1999; Watkinson et al., in press) which refers to specific activities often done at recess. For the purposes of this study the term perceived competence was used interchangeably with perceived ability.

Perceived importance: an individual's belief concerning how important it is to do well on a particular task (attainment value) (Eccles et al., 1983). Within the present study, this construct was assessed through use of the Perceived Importance Questionnaire.

Perceived physical competence: an individual's belief regarding how competent or capable he or she is at a certain physical activity (Horn & Harris, 1996).

Phase one: first week of data collection, involving administration of the Perceptions of Competence Questionnaire and 6 ADL - PP forms.

Phase two: second week of data collection, involving administration of the second Perceptions of Competence Questionnaire and 9 ADL - PP forms.

Phase three: third week of data collection, involving administration of the Perceived Importance Questionnaire and 9 ADL - PP forms.

Phase four: administration of third and final Perceptions of Competence questionnaire. This was the last formal meeting with the participants.

Recess: a break period, typically held outdoors, for children in schools from pre-school through the elementary school level. In this study, recess periods were 15 minutes in length and were held once in the morning and once in the afternoon, for a total of twice a day.

Task specific beliefs: beliefs that one holds regarding their ability or competence and the difficulty of performing a particular task (Wigfield, 1994).

It should be noted that this study was completed in the context and as an extension of a series of studies done under a Social Sciences and Humanities Research Council (SSHRC) project #410-97-0181 entitled Factors Affecting Participation in Unstructured Physical Activity by Physically Awkward Children. Thus, instruments and approaches employed in this study were designed to be consistent with and complementary to other studies within this project. This necessitates the citation of some work that is either in press, unpublished or has thus far only been presented.

CHAPTER 2

Review of Literature

Introduction

Self-concept may be defined as an individual's representation of his or her self-knowledge (Wigfield & Karpathian, 1991). Markus, Cross & Wurf (1990) described self-concept as knowledge structures about the self. These knowledge structures organize individuals' interpretations of their experiences and guide their behaviour. The construct of self-esteem has been differentiated from self-concept and has been used to describe more affective evaluations of the self (Wigfield & Karpathian, 1991). For example, self-concept is an individual's perception about the self (e.g. "I am good at playing soccer"), whereas self-esteem is how an individual feels about certain attributes of the self (e.g. "I am content with how I am"). The distinction between these two constructs holds important implications for understanding the motivation behind one's behaviour. Individual's seek to enhance general self-esteem by seeking activities that make them feel good and avoiding those that make them feel bad (Covington, 1984).

Researchers such as Harter (1982), and Marsh (1986; Marsh & Shavelson, 1985) studied specific aspects of the self-concept and have focused on perceived competence as one of its critical dimensions. Competence, defined as one's success in meeting task demands, is mutually and reciprocally related to the self-system (Coopersmith, 1967). However, it is perceived competence, an individual's *interpretation* of his or her success in domain-specific skills, that greatly affects one's self-concept (Markus, Cross & Wurf, 1990). Within each domain perceived

competence is an important mediating factor in determining whether a person chooses to continue to participate in certain activities (Yun & Ulrich, 1997). Within educational environments, Covington (1984) has posited that children aspire to maximize their perceptions of self-worth by maintaining positive competence perceptions, because perceptions of competence are the most important self-beliefs in the school setting. These perceptions of competence are considered to be an important determinant of motivation (Roberts, Kleiber & Duda, 1981).

Perceiving oneself as competent to achieve valued goals has often been considered as integral to healthy development (Phillips & Zimmerman, 1990). Perceptions of one's own competence are seen as essential to individual functioning throughout life (Bandura, 1986). Research investigating children has shown that perceptions of competence can come into play as early as kindergarten (Eccles, Wigfield, Harold & Blumenfeld, 1993; Marsh, Craven & Debus, 1991). Much of the work investigating children has been conducted within formal settings such as school academics (e.g. English and Math) and competitive sport. However, the structured academic or sports environments are not the only contexts in which competence is valued. Children have the need to feel competent in formal and informal settings. An informal physical activity environment, such as the school playground, also comprises a context where competence is a powerful attribute (Evans & Roberts, 1985). The main focus of this chapter is to review the literature investigating children's perceptions of competence, subjective task values and the relationship between these perceptions, values, and the choices children make regarding achievement tasks.

Development of Children's Competence Beliefs/Perceptions, Expectancies for Success, and Subjective Task Values

Wigfield (1994) discussed types of change that explain the development of children's competence beliefs, expectancies for success, and subjective task values. These beliefs, expectancies, and values are not static constructs. Research and theory indicate that these constructs change both qualitatively and quantitatively over the childhood and adolescent years (Horn & Harris, 1996).

Development of Children's Achievement-Related Beliefs

Very little research exists on young children in the physical activity or sport domain. However, studies in the developmental areas suggest that young children (i.e. 2 or 3 years) do engage in the self-evaluation process and that by 3 or 4 they already have a basic conception of personal competence (Horn & Harris, 1996). Even though the capability to self-evaluate exists, young (4-5 year old) children's expectations for success and perceptions of competence are found to be overly optimistic (Wigfield & Eccles, 1992). They tend to confuse the *wish* to be competent with the *reality* of competence; the distinction between their real self and ideal self becomes blurred (Stipek, 1981). Due to children having the tendency to possess inflated perceptions of competence, this high expectancy of success results in children thinking they will do well on the next task. In fact, this optimism holds up surprisingly well even in the face of repetitive failures at a task. Following failure at physical tasks, children with high perceptions of competence have shown more persistence and higher expectancies for success than children with low competence perceptions (Horn & Harris, 1996). These type of expectations illustrate that young children's expectancies are not based on the reality of their true performance, but

rather on how they wish or hope to perform or achieve (Wigfield & Eccles, 1992). Nicholls (1979) found that in early elementary school, children's perceptions of competence related weakly to competence judgements made by the teacher. However, by the third and fourth grade, correlations between children's perceptions and teacher's ratings have been shown to be more substantial (Wigfield & Karpathian, 1991). Increased correspondence between a child's expectations and previous performance result in increased expectancy of success following experiences of success, and decreased expectations of future success following failure.

Many researchers have discovered that children's competence beliefs for different achievement tasks, although high at young ages, start to decrease during the elementary school years and into junior high school (Nicholls, 1979; Wigfield & Karpathian, 1991; Wigfield & Eccles, 1992; Wigfield, 1994). Expectancies for success are also found to decrease during the elementary school years (Wigfield, 1994). Eccles et al. (1993) demonstrated that younger children, particularly the first graders, reported higher perceptions of competence than the fourth graders in many different domains. Such results support the claims of developmentalists that both cognitive and social influences work together to promote the development of stable ability perceptions and therefore allow for less expectancy for improvement in the face of negative feedback. As children move through elementary school these perceptions of stable ability increase (Higgins & Parsons, 1983). As a result, children tend to become more sensitive to the ramifications of lack of ability (Phillips & Zimmerman, 1990).

These decreases in ability perceptions and expectations for success are due to an improvement in accuracy of perceptions as children get older. Perceptions of competence and actual competence are often poorly correlated in young children. With age and experience we see perceived and actual competence becoming better matched (Nicholls, 1978). The ways children interpret information are not only affected by maturing cognitive capabilities, but also by changes in social comparison opportunities, socializing agents and social roles (Phillips & Zimmerman, 1990). Young children have the tendency to establish their competence judgements from autonomous performance standards (success at a task) in combination with the feedback of significant adults. However, with the acquisition of higher levels of cognitive functioning, usually occurring around the ages of 5 or 6, children start to use the performance of their peers to judge their own competence (Stipek, 1981). Evans and Roberts (1985) revealed that the process of social comparison begins to emerge in children around the ages of 5 to 7, and continues to develop throughout childhood. Initially, children using social comparison are unable to accurately analyse the information that allows them to determine their own relative skill level. As children get older, their self-perceptions of ability become more accurate and less uniformly positive with age. However, it is not until the age of 12 that children are able to fully use social comparison to accurately determine their own capabilities (Evans & Roberts, 1985). This accuracy comes from the increasing stability of perceptions that produce heightened sensitivity to failure (Phillips & Zimmerman, 1990).

Changes in Children's Conceptions of Achievement

Research involving the structure and changes of children's competence/ability beliefs has led to improved understanding regarding the nature of developmental change. However, children's conceptions of those beliefs have not been assessed directly (Wigfield, 1994). It is especially important to comprehend how children conceive different constructs. Children of different ages may view beliefs in different ways and it is therefore important to note these differences before comparisons can be made (Wigfield, 1994). Many researchers have investigated the changes in conceptions of ability that take place as children get older. These different conceptions of ability will influence the criteria used to judge competence (Ebbeck, 1990).

The concept of ability allows us to address questions concerning who is more able at a given activity. It is the construct used to describe who is competent, whether socially, intellectually or physically. Ability as a concept can be applied to many different domains of accomplishment (Nicholls, 1990). The first of three parts of the definition of ability to be examined here involves the assumption that ability is differentiated from luck. The second part entails the distinction between difficulty and ability and the third involves the concepts of effort and ability (Nicholls, 1989).

Ability is a concept that pertains to skill as opposed to luck or guessing. However, it should not be assumed that children see luck and skill as distinctly different domains or types of causality (Nicholls, 1990). Differentiation between the constructs of luck and skill are found to be limited among children aged four and five, but with age, children start to attribute skill outcomes to skill and luck outcomes to

luck (Nicholls, 1989). Weiss et al. (as cited in Nicholls, 1989) showed that kindergarten children expected ability, practice and effort to increase performance on both luck and skill tasks. However, by the eighth grade they expected clear effects on only the skill tasks. Distinction between the concepts of skill and luck may serve to make the emotional highs of success and the lows of failure more extreme on skill tasks and less on luck tasks. It is conceivable that when luck and skill are less differentiated, success on skill tasks does not trigger intense pride nor failure intense shame (Nicholls, 1990). This may be useful in explaining the relatively playful approach children have towards achievement settings, and the less negative effects of failure in skill tasks on the performance of younger students (Harter, 1975).

When discussing difficulty of tasks, the terms "hard" and "easy" are used in different ways. Hard may mean "hard for me" or at times it can refer to "tasks that most others cannot do" (Nicholls, 1990, p. 18). Many problems with maintaining feelings of competence arise due to this difference in meanings. Those that view tasks as hard for themselves, but not for others, will assume that they lack ability. But if what is hard for someone is hard for everyone else, ability is not necessarily lacking. Nicholls (1989) determined three levels of differentiation of difficulty and ability that form a developmental sequence. The first level identified is *egocentric*. Here tasks are distinguished in terms of one's own personal probability of success (hard = "hard for me"). The second level of differentiation is *objective*. Difficulty is recognized independently of one's own expectations of success. However, the child is still unable to determine whether failure at a certain task is a result of low ability or high difficulty. The final level of Nicholls (1989) scale is titled *normative*.

Normative conceptions of ability and task difficulty result in an understanding that tasks are more difficult and require more ability if fewer members of a reference group can do them. Here the concepts of difficulty and ability are completely differentiated. This differentiation involves a better understanding that to be able means to be more able than others.

The normative conception of difficulty and ability, which is acquired at about 6 years of age, entails a significant change in the meaning of social comparison information. This normative conception gives social comparison a more important place in judgements of competence (Nicholls, 1989). As the concepts of difficulty and ability become more differentiated greater accuracy of perceived ability and generally lower levels of perceived ability emerge. With age, children become much better at recognizing their place (Nicholls, 1990).

The final aspect of the definition of ability involves the conception of ability as capacity. In other words, the understanding that an increase in effort can increase how well we perform but only up to a limit that is our current capacity (Nicholls, 1990). One's capacity is judged with reference to the performance of others. Our present capacity limits the extent to which effort will increase our performance relative to that of others (Nicholls, 1989). Again, Nicholls (1989) developed a model illustrating the levels of differentiation of ability and effort. The levels range from effort equalling ability to ability as capacity. At this last level, ability and effort are clearly differentiated. Here we see that ability is conceived as capacity, and the effect of effort is constrained by ability.

When the concepts of ability and effort become differentiated, effort does not seem to make up for a lack of competence. The need to use more effort to accomplish a goal is more clearly an indication of incompetence. Differentiation of effort and ability result in effort having higher psychological costs. Low perceptions of ability (i.e. the expectation that one is going to perform incompetently) are likely to lead to more severely impaired performance in children with a more differentiated conception of ability.

The attainment of the conception of ability as capacity means that even tasks we have mastered might (if expected that others would need less time or effort to complete them) not offer any prospect of a sense of achievement. Effortful accomplishment is still a good thing, however it does not indicate competence as clearly as it does at less differentiated levels (Nicholls, 1989). Conception of ability as capacity will result in less confidence in the power of effort to increase performance relative to others when doubting our own ability. Nicholls' (1989) conclusion is that if one feels one lacks ability, one will view his or her best as not good enough. This feeling would then result in the devaluing of activities that have the potential to reveal one's incompetence, therefore leading to avoidance of such tasks. Thus, the connection between perceptions of competence and behavioural choices would be apparent.

Changes in Children's Conceptions of Subjective Task Values

During the early elementary school years, the subjective value of a task may be primarily characterized by children's interest in the task (Wigfield & Eccles, 1992). Therefore, we may see children's interest in certain activities determining

what they choose to participate in. At very young ages, a child's interest in an activity may not relate closely to his or her performance level on that skill. Therefore, young children may participate in certain achievement activities that interest them without regard for how good they are at those activities. However, children's interest in an activity does start to relate more closely to performance during the elementary school years (Wigfield, 1994).

Gender Differences in Perceptions of Competence and Task Value

Mixed findings have resulted from research investigating the existence of gender differences among children's perceptions of competence and task values. Many researchers (e.g. Eccles & Harold, 1991; Harter, 1982; Marsh, Craven & Debus, 1991) report gender differences in self- and task perceptions, especially in gender-role-stereotype domains. Differences that do emerge illustrate that each sex reports greater perceived competence in gender-role congruent activities (Eccles et al., 1993). These sex differences that appear for perceptions of competence follow consistently with sex stereotypes resulting in boys having higher self-perceptions in some areas and girls having higher self-perceptions in other areas (Marsh, Craven & Debus, 1991). Therefore, we may see boys with higher perceptions of competence in the sports domain and girls with higher competence perceptions in the domains of reading and music. For the sake of this study, we are primarily interested in results produced from investigating the area of perceived physical competence.

The majority of studies completed have supported the claim that perceptions of physical competence are generally higher for boys than for girls (Eccles & Harold, 1991; Eccles et al., 1993; Feltz & Petlichkoff, 1983; Harter, 1982; Marsh, Craven &

Debus, 1991; Mullan, Albinson & Markland, 1997; Yun & Ulrich, 1997). An investigation of the sport domain showed that gender differences on perceptions of physical ability appeared as young as grade one (Eccles & Harold, 1991). Surprisingly, the size of these differences was the same across grades one through four. Results illustrated that already by the first grade, girls retained a more negative assessment of their general athletic ability than did boys (Eccles & Harold, 1991). Whitehead (1995) conducted an investigation using Fox's (1990) Physical Self-Perception Profile instrument, that resulted in gender differences for seventh and eighth grade students on the scales of perceived sport/athletic competence, strength competence and perceived physical condition. Eccles et al. (1993) also found similar results showing the earliest emergence of gender differences for grades one, two and four, occurring in the area of physical competence, with boys having higher perceptions than girls. Harter's (1982) study, using her Perceived Competence Scale for Children, reported that the only gender differences to appear for third through ninth grade children were for the physical competence subscale, with males consistently reporting higher scores than females. A contrasting study to the above-mentioned, in terms of results found, investigated fourth and fifth graders and showed that there were no significant differences for gender on perceived physical competence (Roberts, Kleiber & Duda, 1981). Another investigation completed with African American children also showed no significant gender differences for perceived physical competence (Goodway & Rudisill, 1997).

As the results above have illustrated, in many instances boys rate their perceptions of physical competence higher than that of girls. Perhaps a broader, more

encompassing measure of physical competence that includes more non-competitive, recreational sporting activities would allow girls to regard themselves as more or at least as equally physically competent as boys (Mullan, Albinson & Markland, 1997). Recess is a less structured time period where the emphasis is often on just getting out and being active. An environment such as the school playground may be a perfect setting for girls to express their physical competence.

Not only are gender differences apparent for perceived competence, but they also exist for perceptions of task value. Gender-role socialization is seen to shape individuals' goals and values, leaving men and women with different values and goals (Eccles, 1984a). The gender-role stereotypes that exist lead males and females to rank the relative importance of certain tasks and activities differently (Wigfield & Eccles, 1992). Tasks embodying certain characteristics should have different attainment values for men and women (Eccles, 1984a). Here we may see males more likely to engage in athletic activities because they place more importance on demonstrating their athletic competence than do females. Studies completed have shown boys to value sports more than girls, whereas girls valued reading and music more than did boys (Eccles & Harold, 1991; Eccles et al., 1993).

Achievement Motivation

The study of motivation in both sport and academic settings has received considerable attention in scientific literature. However, very little research has been conducted investigating motivation in informal settings such as the school playground at recess. Nevertheless, it makes sense that the same concepts explaining why people do what they do, can be used to begin to explain children's behaviour on the school

playground. Theorists in the area of achievement motivation have tried to explain people's choice of achievement tasks, persistence on those tasks and vigour in completing them. Many theoretical models of achievement motivation propose that an individual's perceptions of ability and expectancies for success on a given task play an integral role in motivation to perform that task (Wigfield & Eccles, 1992).

The Expectancy-Value Model

Expectancy-value theory (Eccles et al., 1983) has been acknowledged as one of the most important views concerning achievement motivation. Broadly characterized, this theory claims that an individual's expectancies for success and the value one places on the task are important determinants of motivation to choose and participate in certain achievement tasks (Wigfield, 1994). Children's achievement choice, performance, and persistence on achievement tasks are most directly predicted by the subjective value they attach to certain tasks and their expectancies for success on those tasks. Eccles et al. (1983) generated a theoretical achievement choice model for investigating the motivational factors underlying individuals' decisions regarding achievement-related choices (see Figure 1). Although much of the work validating this model has focused on achievement in academic settings, the application of this model can be extended beyond that. In fact, this model has shown to be relevant to sports as well as, if not better than, it does for academic subjects (Eccles & Harold, 1991).

The Eccles et al. (1983) model links task choice to performance expectations and to the value individuals attach to the specific tasks. These performance expectations are based upon perceptions one has regarding ability or competence in

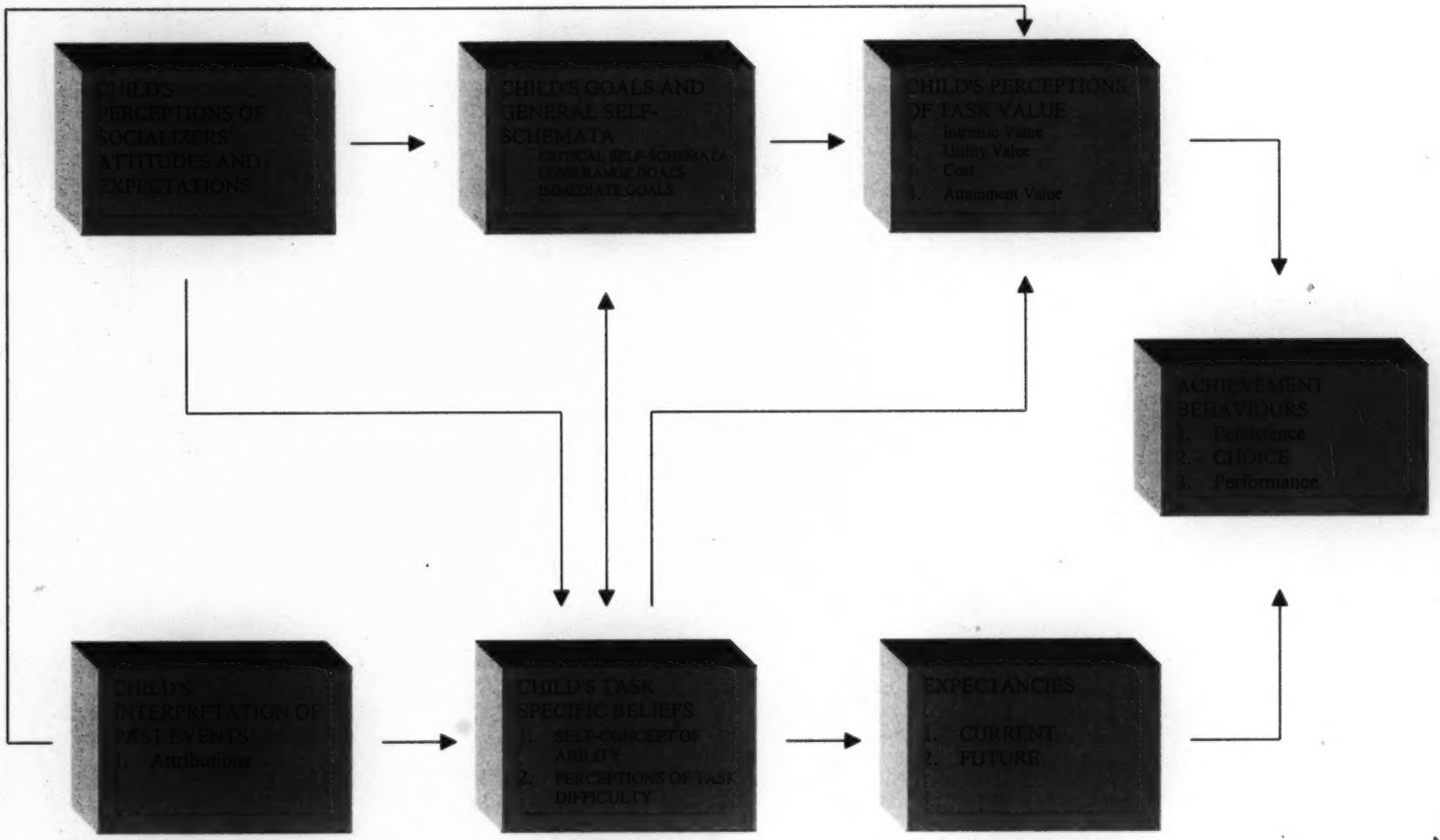

Figure 1. Expectancy-Value Model (Eccles et al., 1983)

the specified area. This model reflects a focus on the psychological reasons for people's choices in achievement settings. Therefore, value and expectancy are viewed as cognitive rather than exclusively motivational constructs. Within this model primary focus is on the conscious, rather than the unconscious components of individuals' choices (Eccles et al., 1983). What people think makes a difference.

This model of activity choice is constructed on the assumption that it is one's interpretation of reality rather than reality itself that most directly motivates choices made regarding activity (Eccles & Harold, 1991). A central theme of cognitive developmental models of achievement motivation is that a child's perception of reality rather than actual reality, is the more powerful predictor of how he or she approaches and reacts to certain achievement demands (Bandura, 1981). When considering perceived competence or ability, this perspective implies that children's *perceptions* of their abilities are more important than their actual abilities when it comes to determining their motivation and achievement. Markus, Cross and Wurf (1990) claimed that when an individual experiences a sense of competence (perceived), it is usually driven and maintained by a set of self-relevant internal structures that have the potential to facilitate competent performance within a given domain. A somewhat optimistic belief that one is competent can eventually result in competence by selectively directing the individual's concentration, energies and efforts toward the desired task. Therefore, feelings of efficacy, mastery and optimism regarding tasks are created where actual competence has the potential to be displayed (Markus, Cross and Wurf, 1990).

The main components of this model that were considered were the achievement behaviour of choice, and the belief and task value constructs. Primary focus was on those elements of the Eccles et al. (1983) model that link perceptions of ability and expectancies to choice. The secondary focus involved investigating children's subjective task values and how they also relate to choice.

The Eccles et al. (1983) model is theorized so that children's task specific beliefs predict one's expectancies, whether current or future. Within this construct of beliefs, are the self-concept of ability (perceptions of competence) and perceptions of task difficulty. However, Wigfield (1994) has noted that in tests of this model, children's perceptions of task difficulty do not strongly predict either performance or choice, and therefore are not considered further in this review.

Ability beliefs allude to children's evaluations of their competence in different domains. Within the expectancy-value model, beliefs regarding one's ability are contrived of as broad beliefs within a certain area whereas one's expectancies for success on an activity are viewed as specific beliefs. For example, an ability/competence belief (perceptions of competence) would be "how good you think you are at math", and an expectancy for success would be "how well you think you will do in your math course this year" (Wigfield, 1994, p.53). These competence beliefs that children hold are not universal to all domains, but rather distinct and separate for different domains. Harter (1982) created a perceived competence scale that considered different areas of children's competence. Within her work she established that children as young as 8 years old are capable of making meaningful distinctions among the different domains investigated by her scale. Marsh, Barnes,

Cairns and Tidman (1984) and Eccles, Adler and Meece (1984) also examined children's competency beliefs in many different domains. Marsh and his colleagues were able to demonstrate that even children in kindergarten were able to clearly identify distinct domains of competence. Eccles et al. (1984) were able to illustrate the same findings with children in the first grade. Consequently, we see that even at very young ages, children are able to hold separate competence beliefs for different domains.

Through further investigation of competency beliefs within domains we find that children also have different competence-related beliefs for specific activities within each domain. Eccles et al. (1993), through the investigation of the development of children's self- and task perceptions during the elementary school years, exhibited specificity of children's competence beliefs. As predicted, boys' competence perceptions were higher than girls' in the domains of math and sport; in contrast, girls' competence beliefs were higher than the boys' in instrumental music. However, although girls felt they were less capable in the sports domain, they rated their tumbling competence much higher than the boys did. This outcome shows the importance of investigating self- and task perceptions for specific activities within a domain rather than for just domains in general (Eccles et al., 1993). For example, when studying children's competence beliefs on the school playground, it is important to look at all the tasks and activities as separate and distinct. A feeling of high competence on one activity does not necessarily equate with feelings of high ability on all other activities associated with the playground. Thus when dealing with an

individual it is important to pay attention to the individual's activity specific perceptions of competence profile.

Expectancies for success may be described as children's beliefs about how well they expect to do on an upcoming task (Wigfield, 1994). In Bandura's (1977) terms, efficacy expectations are the main kind of expectancy beliefs included within this model. These types of expectancies are an individual's expectation that he or she is capable of producing the outcome. Decision and achievement theorists have recognized these expectations as critical mediators of behavioural choice (Eccles, 1984a; Eccles & Harold, 1991). Numerous studies have revealed the importance of performance expectations for a variety of behaviours including task choice, performance and persistence. Feather's study (as cited in Nicholls, 1989) has indicated that higher motivation is associated with higher expectations of success. For example, studies concerning achievement in mathematics have shown that there is a consistent link between expectations for one's future math performance and the decision to take math (Eccles (Parsons), 1984b). Thus, expectations are shown as linked to behaviour. Studies performed with children in sport reveal that children who have higher perceptions of physical competence, and therefore expectations of success, engage in those physical activities that allow them to demonstrate that ability (Roberts & Duda, 1984; Roberts et al., 1981). Again, the demonstration of the relationship between perceptions of competence and behaviour is made. Eccles and Harold (1991), through the investigation of third, fourth, and sixth grade males and females, disclosed results that supported their hypothesis that sport participation was related to an individual's perception of their ability in the sport domain.

Within the Eccles et al. (1983) model, expectancies and task specific beliefs are theorized as being two distinct constructs. However, some researchers have questioned whether the two should be thought of as separate (Eccles et al., 1983; 1993). Factor analyses of studies assessing competence and expectancy beliefs for children ranging from the first to the twelfth grade showed that competence beliefs and expectancies for success loaded on the same factor (Wigfield, 1994). Eccles et al. (1993) illustrated that children's competence perceptions included items tapping their ratings of their ability and their expectations for success. Results such as those mentioned above have implications for the model, illustrating that the two constructs of ability perceptions and expectancy suggested as distinct in the model are not empirically distinguishable for children in "real-life" achievement settings. Therefore, without a clear distinction between ability perceptions and expectancies, it is possible that perhaps the two constructs can be merged (Wigfield & Eccles, 1992).

The relationship between competence beliefs and expectations for success is a positive one. High perceptions of ability indicate that future success is likely. If success brings pride, attribution of high ability to oneself should maximize expectations of future success and feelings of accomplishment (Nicholls, 1989). As children get older and their competence beliefs relate more closely to their actual performance outcomes, the positive relationship strengthens. A child who believes he or she is competent at a certain task believes that mastery of similar tasks in the future is likely. Those children that have low ability perceptions end up with low expectations for success. The factor-analytic research illustrates that these two constructs, competence beliefs and expectations, are very similar in practical terms. However, because competence beliefs are seen as more

general than expectancies, these ability beliefs may causally precede expectations one has for success (Wigfield, 1994).

In other aspects of the model, tied somewhat to children's task specific beliefs, the construct of children's subjective task values leads to achievement behaviours, as do expectancies for success. Within the achievement motivation literature, subjective task values have been described as how a task meets different needs of individuals (Wigfield, 1994). Eccles et al. (1983) identified four major components of subjective task values: intrinsic value, utility value, cost, and attainment value. Intrinsic value can be defined as the satisfaction or enjoyment one gets from doing a task (interest). Utility value or usefulness of the task pertains to how a task coincides with an individual's future plans. Cost is what the person has to give up to do a task, including anticipated effort needed for completion of such task. Lastly, attainment value refers to the importance of doing well on a particular task (importance). These values are all assumed to be qualities of the task or activity that contribute to the increasing or declining likelihood that an individual will choose to do it. However, Wigfield et al. (1992) discovered that during elementary school, children's subjective task values were less differentiated. The only two factors that emerged in a confirmatory factor analysis of children's replies to items in sport, math and reading domains were interest and importance. Wigfield (1994) also concluded that initially, children's perceived importance and interest for certain tasks will most likely be highly correlated. Only after more experience with the tasks will they be able to recognize the distinction between these two components of task value.

The two constructs of task (achievement) value and competence beliefs are found to relate positively with one another, however they are not to be mistaken as being one in

the same. Young children have displayed the capacity to distinguish between their competence beliefs and subjective task values (Eccles et al., 1983; Wigfield, 1994). Even at very young ages, children have been shown to hold distinct beliefs about what they value and what they are good at in certain domains such as sports, reading and math. This type of evidence suggests that the two central constructs within this expectancy-value model (expectancy-related beliefs and task values) are distinct and do appear as such quite early on in different activity domains (Wigfield, 1994). Thus, importance and perceptions of competence are distinct. These two constructs independently influence individuals' *choice* of activity and individuals' behaviour in various task domains (Eccles et al., 1983; Wigfield & Eccles, 1992).

Expectancy-value models have been extremely instrumental in demonstrating people's choices of certain activities and their persistence at those activities. These models have been thought of as emphasizing the rational processes involved in making decisions or choices (Wigfield & Eccles, 1992). Based on their previous experiences, people decide how well they expect to do on a certain task (expectancy) and how much they value success on that task (task value). These factors are instrumental in determining whether or not participation on such activity will take place and continue.

Harter's Competence Motivation Theory

Harter's (1978) theory attempts to describe, explain and predict why people are motivated to participate in certain achievement domains. Within this model, perceived competence is not viewed as a global ability, but rather multidimensional, with specific domains in the areas of physical, social, and cognitive concerns (Feltz & Petlichkoff, 1983). Mastery attempts in specific achievement domains are contended by Harter to be

followed by either successful or unsuccessful outcomes. These attempts are evaluated based on both internal information (e.g. effort expended) and external information (e.g. feedback from significant others) that lead to perceptions of competence or incompetence that affect one's motivation to choose and persist in certain tasks (Harter, 1978). Significant others are found to be a strong source of information in the early through late childhood years, however Harter theorizes that a developmental shift from outside sources to internal standards and goals starts to emerge in early adolescence. This age-related shift towards self-referenced sources is postulated to be instrumental in maintaining high perceptions of competence, positive affect, and motivated behaviour (Weiss, Ebbeck & Horn, 1997).

Harter (1978) illustrates that perceived competence should relate positively to one's intrinsic motivational orientation to prefer challenge, to be curious and to engage in individual mastery attempts. This conceptualization of competence motivation predicts that those who perceive themselves to be highly competent at a certain skill will engage in and persevere longer at the skill and will sustain interest in mastering that skill. Conversely, those who perceive themselves to have low competence will not persist or maintain task interest. Specifically, children select achievement tasks that demonstrate their competence, and avoid tasks that demonstrate their incompetence (Roberts et al., 1981). According to this model, perceptions of competence contribute to the development of achievement motivation (Goodway & Rudisill, 1997).

It is suggested by Harter (1982) that *actual* competence does contribute to motivation, however its influence is not as strong as that of perceived competence. Over- or underestimation of abilities is a possibility with children due to inaccuracy of self-

perceptions at young ages. Overestimation can lead one towards unrealistic expectations and unsuccessful results. Failing at a task that is regarded as easy has great capacity to result in low perceived competence, and therefore the child may wish to avoid future attempts at that task. Underestimation of competence can result in a child having low expectations for future competence, and may negatively influence performance outcomes and one's motivation to persist. From these types of scenarios it is reasonable to assume that the way a child perceives his or her competence will influence their incentives to accomplish and continue in certain achievement tasks (Goodway & Rudisill, 1997).

Much of the work done with Harter's (1978; 1982) competence motivation theory has been done in the physical domain. Harter (1982) developed a self-report instrument, the Perceived Competence Scale for Children, used to assess a child's sense of competence across different domains. With children having different feelings of competence in different areas, it was important for Harter to identify the major competence domains that were central to elementary school children's sense of self. The three competence subscales that materialized were: cognitive competence, social competence and *physical competence*. With this study focusing on children's perceptions of activity tasks on the playground, the physical domain is the area of interest. This subscale of physical competence that was established by Harter concentrated on sports and outdoor games (playing sports well, easily learning outdoor games, and preferring to play games rather than watch others play) (Harter, 1982).

Children's perceptions of their physical competence have been shown to be strong and consistent predictors of their participation, effort and continued interest in physical activity and sport (Feltz & Petlichkoff, 1983; Roberts et al., 1981). According to Harter,

individuals are motivated to become competent in achievement settings such as sports and peer relationships. In order to quench an individual's need to feel competent, mastery is attempted. Successful performance results in positive affect, which in turn has the ability to increase competence motivation. These perceptions of competence that are associated with successful outcomes are important determinants of an individual's future desire to participate (Harter, 1978). Stated differently, those who perceive that they are competent at certain physical tasks are more likely to continue their participation, whereas those with low perceptions of physical competence are most likely to withdraw from the activity.

One of the first sports studies that used Harter's competence motivation theory was completed by Roberts et al. (1981). For this study it was hypothesized that a relationship would exist among children's perceived physical competence, expectations for success in sport, and persistence in such related activities. After investigating the perceived competence of male and female fourth and fifth graders, results revealed that children with higher levels of perceived competence in the area of sport were more likely to participate in sport than those who were low in perceived competence. In conjunction with these results, there was also evidence of children with high perceived competence persisting at tasks longer, and having greater expectations for future success, than individuals scoring low on perceived competence.

Moving Harter's competence motivation theory to the school playground allows for the inclusion of many different activities in which children can demonstrate various levels of competence. During recess, children on the school playground face many different activity choices every day. Based on Harter's theory, it is hypothesized that

children will choose to participate in activities that they perceive will demonstrate their competence. In other words children will decide to take part in those tasks in which they feel they are competent. Therefore, the relationship between the activity choices a child makes, and the perceptions of competence they have for those particular choices should be generally positive.

Measurement of Perceptions of Physical Competence

Many different instruments have been developed and used to measure perceptions of ability and competence. Some instruments have been developed to test all aspects of one's self-concept whereas others have been specifically designed to investigate the physical domain. These tools have been designed with the intention of exploring individual perceptions of physical and/or athletic competence/ability.

Among the earlier instruments designed to assess physical self-competence were those such as the Tennessee Self-Concept Scale (Fitts, 1965) and the Physical Estimation Scale (Sonstroem, 1978). Embedded within these instruments were subcomponents or scales designed to measure one's perceived physical competence. One of the more popular tools used for assessing perceived physical competence has been the athletic subscale of Harter's (1985) Self-Perception Profile for Children (SPPC). In addition to this measurement tool, Harter has developed other instruments that catered to investigating children's perceptions of competence.

Harter's (1982) Perceived Competence Scale for Children places emphasis on the assessment of a child's sense of competence across different domains. Separate subscales comprising cognitive, social and physical domains are identified. Following development of Harter's Perceived Competence Scale for Children, another instrument

was designed that used a pictorial scale of perceived competence and social acceptance for young children (Harter & Pike, 1984). This scale, used to assess children's perceived physical competence (Goodway & Rudisill, 1997), includes physical competence, cognitive competence, peer acceptance, and maternal acceptance as its subscales. Within the domain of physical skills, activities such as swinging, climbing, skipping, and running are featured. Pictorial representations of two contrasting scenarios are presented for each question. The picture that best represents the ability of the individual is chosen and within that scenario the child is asked if he or she is sort of like the person in the picture or if he or she is a lot like the individual in the picture. In addition to the two instruments listed above, Harter (1985) developed the SPPC, which is a questionnaire that similar to the others but without illustrations, lists activities (e.g. academics, recreational games, and competitive sports) and asks the child to pick a scenario that is most like themselves. Perceived physical competence has been assessed by using the Athletic Competence subscale of the Harter's (1985) SPPC (Weiss et al., 1997). This athletic competence subscale, consisting of six items organized in a structured alternative response format, is intended to assess the extent to which individuals view themselves as competent in games and sport skills.

Other instruments such as the Physical Self-Perception Profile (PSPP; Fox, 1990), and Marsh' (1990) Self-Description Questionnaires (SDQ) have also been utilized to test many components of one's self-concept. Again, these instruments use a structured alternative scoring format. The PSPP was developed to study self-perceptions within the physical domain, and contains five different subscales; perceived sports competence, perceived body attractiveness, perceived physical strength, perceived physical

conditioning, and physical self-worth. The SDQ questionnaires were based on the multiple dimensions of self-concept and contain scales for physical ability, and physical appearance in addition to others. Based from the SDQ, Marsh (1994) developed the Physical Self-Description Questionnaire (PSDQ) which investigates nine physical self-concept domains such as coordination, sports, appearance and health. All of these instruments or versions of such have been utilized with individuals ranging from young childhood to adults. It is important to note that most such instruments do not assess perceptions of competence beyond types of physical activity. That is, subscales are intended to tap into perceptions of competence in 'sport' or 'fitness' activities rather than into specific activities such as soccer, running, dribbling or hanging. Thus, a degree of generalization is still a required characteristic of such assessments.

Summary

The relationship between children's perceptions of competence and the choices they make regarding different activities on the school playground needs further study. Both the Eccles and Harter models characterize that perceptions of competence are directly related to the achievement choices individuals make. The literature has demonstrated that a positive relationship does exist for perceptions of competence and choice in both academics and sports settings. In motivational terms, trying to maintain self-worth and feelings of pride leads to behavioural choice (Wigfield & Karpathian, 1991). In other words, children with higher perceptions of competence on certain skills are likely to choose to participate in those skills. Conversely, those who feel they have low competence on a certain activity are more likely to avoid that task. These

relationships should be robust in free choice settings such as the school playground at recess.

In addition to one's expectations for success, the value they attach to a task is also an important determinant of their motivation to participate in certain achievement tasks (Wigfield, 1994). Eccles et al.'s (1983) proposed four components of subjective task values are not clearly differentiated in elementary school aged children. Instead two factors: interest and importance to do well are the value constructs that appear for children in this age range. These components of value relate positively to children's competence and expectancy beliefs, with the relationship strengthening as each child gets older. However, during the early school years children's competence beliefs may not relate to their valuing of different activities, and instead the two constructs remain somewhat independent (Wigfield, 1994). Thus both need to be assessed separately for the present time.

With extensive literature illustrating this relationship for academia and sports, the same results may be anticipated when investigating task choice on the playground. However, due to the specificity of perceptions of competence and expectancies for different domains, it is important to investigate these relationships in this setting before assuming the results to be identical to those reported above. However, it is hypothesized that those activities chosen by children will reflect high ratings of perceptions of competence. One would not expect to see children participating in tasks in which they do not feel at least somewhat competent. It is also expected that this relationship (between perceptions of competence and choice) will strengthen as the child gets older. In other

words, first graders may rate themselves high in competence on every skill, and therefore it is hard to discriminate between what they feel they are good at and what they do. With the older children (e.g. fourth graders), a stronger relationship between perceptions and choice is anticipated due to children at this age being more accurate and less overly optimistic regarding their ability. Another finding should demonstrate children choosing to participate in those activities they identified as important, and avoiding those that are not important.

CHAPTER 3

Method

Participants

Participants for this study consisted of 14 students from the same split grade 3-4 class. This grade level was chosen when a review of literature demonstrated that by the third and fourth grade, perceptions of competence were much more accurate than those of very young children (Eccles et al., 1983; Goodway & Rudisill, 1997; 1993; Wigfield & Karpathian, 1991). Very young children have demonstrated the tendency to inflate their perceptions of competence in all areas. Wigfield & Karpathian (1991) revealed that by the third and fourth grade there is an increase in accuracy and discrimination of competence perceptions. Hence, the use of children in grades 3 and 4 in this study. Both male ($\underline{N} = 7$) and female ($\underline{N} = 7$) students were included in the investigation. Ethics approval was obtained from the Faculty of Physical Education and Recreation Ethics Committee prior to any data collection. Permission was also obtained from the Edmonton Public School Board, the school's principal and the teacher. A class with an enrollment size of 21 was chosen for the study. Letters informing parents of the study were sent home with the class members. Study participants were those for whom parental consent was received (see Appendix A). This resulted in the final 14 participants.

For this investigation, all children recruited from the intact class comprised the basic unit of study. Young (1985) demonstrated that on the school playground the classroom unit remained relatively unaltered. He found intermixing of class groupings on the playground to be very rare. Each class seemed to remain fairly self-

contained with their own members, activities, and territory. In other words, children from a given classroom represent a cohort that, for the most part, is meaningful and stays together on the school playground at recess. This finding was consistent with what was observed in this study.

Instruments

ADL – PP Self-Report

Watkinson & Causgrove Dunn (1999; Watkinson et al., in press) designed a self-report instrument for the purpose of identifying playground activities in which children may participate on a daily basis (see Appendix B). Through illustrations, the instrument was designed to portray a wide variety of possible activities completed on a playground that contained typical traditional and adventure apparatus. Sports and non-equipment games are also illustrated. A total of 54 activities that were frequently observed on the elementary school playgrounds were included in the final instrument. Of those 54 activities, 50 were representative of warm weather or year-round activities, with 4 illustrating additional winter activities (e.g. sliding down a hill, building a snow fort). Pen and ink drawings illustrating children doing the 54 activities are displayed on an 11" x 17" sheet of laminated white paper. Extra drawing space for activities that were not already illustrated is also provided. Each illustration is numbered and labeled. A question displayed in the center of the instrument asks "What did you do at recess today?" Forms include a space for name, grade, and school to allow for easy participant identification and to personalize the recording process. Thus far, research employing this instrument has employed a format with children responding to extensive verbal guidance from an adult by

circling activities in which they participated (Dwyer, 1999). This instrument has been used with children in grades 1-4 and the information provided by children has shown to be a substantially valid representation of activities actually done as confirmed by adult observers (Watkinson & Causgrove Dunn, 1999; Watkinson et al., in press). Prior to this study, the effect of increased self-administration of the instrument on the validity of the response data had not been investigated.

Perceptions of Competence Questionnaire

The Perceptions of Competence Questionnaire employed in this study (see Appendix B) is based on the self-report instrument developed by Watkinson & Causgrove Dunn (1999; Watkinson et al., in press). The development of this illustrated self-report form resulted in an instrument representing those same activities seen in the ADL - PP instrument. Again, 50 of the activities are typical of those engaged in during warm and moderate weather, with an additional 4 representing skills in which children could participate only during winter.

The questionnaire was presented on white paper, is three pages long, and illustrates and lists all 54-playground activities commonly available to children during recess. The title of this instrument displays the question "How good are you at this skill?" A 6-point scoring system is placed beside each illustration. The terms used are: **really bad**, **bad**, **o.k.**, **good**, and **really good,** with scores ranging from 1 for "really bad" up to 5 for "really good" (a score of 6 indicates **never tried it**). This terminology was chosen to be representative of the way children perceive their competence when participating in playground activities (Watkinson et al., in press).

Perceived Importance Questionnaire

A perceived importance questionnaire (see Appendix B) was designed, by the researcher, similarly to the perceived competence questionnaire described above. This instrument was designed to assess the importance (value) a child attaches to each activity portrayed. It is parallel to the perceived competence questionnaire in that it too lists illustrations of all 54 playground activities commonly available to children during recess. However, this instrument contains the title: "How important is it for you to be able to do these activities at recess?" A scale of 1 to 5 was used with descriptive terms utilized only at the anchors. The bottom anchor of **not at all important** was scored as a 1 and the top anchor of **very important** carried a score of 5. This instrument was printed on yellow paper in order to further eliminate any confusion between the Perceptions of Competence Questionnaire and the Perceived Importance Questionnaire. In this study these two instruments were completed at least one week apart.

Procedure

In order to investigate the relationship between children's specific perceptions of competence and activity choices they make on the school playground at recess, children (both male and female) from the same 3-4 split grade class were studied.

In order to obtain access to a class, the principal of the potential school was contacted. The school contacted was one for which permission from field services had already been granted in conjunction with a larger series of studies. The principal then approached a teacher of an appropriate potential class and a meeting was arranged. A thorough explanation regarding the study, the demands of involvement,

its anticipated benefits, and the lack of risk, took place. The teacher and principal provided their input regarding the classroom procedures and protocol. Once agreement occurred between the principal, teacher and researchers, information letters and consent forms (see Appendix A) were distributed to the students by the teacher. The teacher agreed to collect the consent forms from the students as they were returned. In an attempt to gain maximum participation, recruitment of subjects included a follow-up distribution of consent form packages to those from whom a reply was not received. Once a sufficient proportion of consent was gained (67%) the investigation began. Parents seeking further explanation or clarification about the investigation were given the opportunity to request a phone call from the researchers. The recruitment process described took approximately three weeks to one month to complete.

There was a total of three different data collection phases that ran consecutively in the late fall in an arrangement agreed upon with the teacher (see Figure 2). Each phase of testing took place for one week. At the beginning of the first two phases (and following the third phase) the participants were administered the perceived competence questionnaire. The researcher verbally administered this questionnaire fully each of the three times, guiding the children through each question. This followed the format used in previous research (Watkinson & Causgrove Dunn, 1999).

Following the completion of the perceived competence questionnaire on the first day, and the following four days of phase one, subjects were asked to fill out the ADL - PP following both their morning and afternoon recess periods. However, the

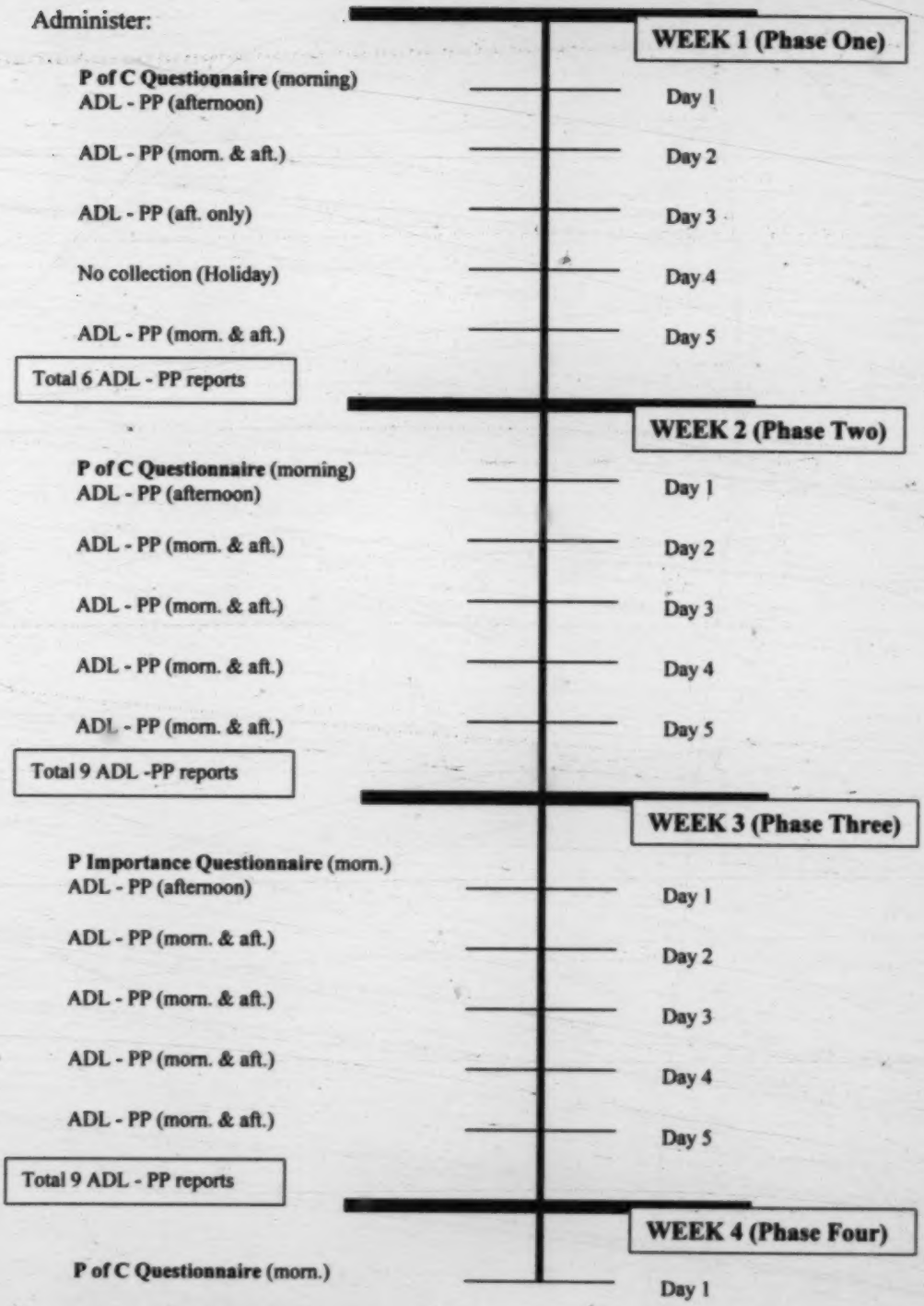

Figure 2. Timeline of Data Collection

ADL - PP was not administered the same morning as the Perceptions of Competence Questionnaire but rather following the afternoon recess of the same day. Initially, the researcher talked the subjects through each activity on the ADL - PP (a procedure employed in previous research with this instrument). However, as the study progressed the participants became quite familiar with the instrument, and were encouraged to complete it on their own. The validity of this self-administration was one of the methodological questions this study was designed to address. Judgements concerning the ability of the children to assume this role and still provide valid information were reserved until experience with the protocol took place.

The same researcher was present during the administration of every questionnaire and ADL – PP report form. In order to monitor accuracy of the children's several observations of the children on the playground took place. These observations were completed by trained observers and took place approximately three to four times each phase. Trained observers were required to meet an interobserver agreement level of 85% or higher. This value was calculated by dividing the number of agreements (activities observed by observers and circled by participants) by the number of disagreements plus the number of agreements and multiplying the total by 100. Observers were given a list of all illustrations represented on the activity report forms used by the children once back in the classroom. Each observer was randomly assigned one participant to observe and they were required to circle all of the activities they saw their subject participate in over the course of one recess period. With increased self-administration of the instrument, percentages of agreement were calculated between what the observer saw and what the child had recorded. An

agreement of 80% and higher was considered sufficient. The protocol used for the observation was described by Watkinson & Causgrove Dunn (1999).

Perceptions of competence ratings for each of the skills identified on the questionnaire were collected at the beginning of phase one, two and four. The questionnaires were administered preceding recess. The researcher administered the questionnaire in the classroom, with the following instructions:

> "On the pieces of paper you have in front of you, there are some pictures of children doing different skills. For example, the first picture is of a child sliding down a slide. Can everyone see that picture? What I would like to you to do today is fill out these pieces of paper by answering **how good you think you are at doing what the children in the pictures are doing.**
>
> Right beside each picture, there are six different answers that you could circle. There are no right or wrong answers, you are just going to circle the **one** answer that is right for you. It is important to know that it doesn't matter if it is a boy or girl in the picture. So when you look at the first picture of the child sliding down the slide, you could answer either, **really bad, bad, okay, good, or really good.** Now, if you have never tried sliding down a slide and don't know how good you are at it then you could circle **never tried it.** "

The researcher led the children through the questionnaire, picture by picture. Instructions were as follows:

> "We are not going to compare your responses with anyone else, we just want to know what you think about how good you are at these activities. So let us do the first question together. Here is a picture of a child standing on a moving swing, how good are you at standing on a moving swing? Are you really bad, bad,

> o.k., good, or really good at standing on a moving swing. Circle the one that is right for you. If you have never tried standing on a moving swing and don't know how good you are then you could circle never tried it. Is everyone finished answering? Lets move on to the next question."

Data from self-reported activity participation following 3 weeks of recess periods was used to determine the activity choices made by the children during their recess periods. The ADL - PP forms were administered by the same researcher in the classroom immediately following each recess period, with the following instructions:

> "In front of you is a page filled with many pictures of children doing different activities. What I would like you to do is circle any of the activities that you did at recess today (identify morning or afternoon specifically). Whatever you did at recess is okay, it isn't a contest, and there are no right or wrong answers. It doesn't matter if it is a picture of a boy or girl, you can still circle the picture if it shows an activity that you did at recess. Also, if the picture doesn't look exactly like the stuff that you play on your playground, that's okay too. If there was something that you did at recess and you didn't see a picture of it, then you can add it yourself. You may draw the activity in the free space at the bottom of the page. Remember, it is important to be honest, only circle the activities that you did at this past recess."

The researcher led the children through the report form, picture by picture, using a variety of cues to aid recall. At the initial phase of the study the instructions were as follows:

> "This is a picture of a child swinging on a swing. Did you do any swinging this morning at recess? If you did then please circle the picture of the child swinging. If you did not do any swinging please do not circle it. Remember, only circle the things you did at recess

this morning, not yesterday. Let's go on to the next picture. This is a picture of a child climbing up a ladder etc."

Following completion of the ADL - PP, participants were given the opportunity to draw and/or write any activities they had performed at recess but did not see on the report form. As the study progressed, the researcher took a decreasing role in the administration of the ADL - PP. Although the researcher was always present, the participants completed the reports on their own initiative. The primary reminder given to the children was to restrict their responses to the recess just completed.

At the beginning of the third data collection phase (after two weeks of activity reports) the Perceived Importance Questionnaire was administered to the subjects preceding recess. Again, the researcher fully administered the questionnaire to the subjects guiding each participant through all 54 questions. Instructions given to the participants followed the same pattern as those used for the Perceptions of Competence Questionnaire except that the focus of this instrument (importance rather than competence) was emphasized as distinct from others they had completed.

Interviews

In conjunction with the questionnaires and ADL - PP forms, five children for whom consent to be interviewed was received, were consulted separately by the researcher. During these interviews, the researcher discussed and sought out clarification concerning certain aspects of the child's playground behaviour. The goal of these interviews was to discuss some of the perceptions of the children regarding their own responses. The exact structure of each interview depended on the nature of the data collected from each child. Each interview was audio recorded and took approximately 15 minutes.

In addition to interviews, the researcher kept a journal to record activities that took place within the classroom or on the playground on days of data collection. Such things as weather, classroom climate, and class activities were noted. This journal was completed to monitor the process and the explanation of any unusual but systematic results.

Statistical Analyses

Data were analyzed using the Statistical Package for the Social Sciences (SPSS).

In order to investigate the relationship between perceptions of competence and perceived importance to activity choice as well as the stability of the subject's perceptions of competence, Repeated Measures ANOVA's and Paired Samples T-Tests were utilized. Group averages were calculated for perceptions of competence and perceived importance scores on activities not done, activities done less than 1/3 the time, and activities done 1/3 or more the time. Analyses were run on the perceptions of competence scores for the first week of data collection, the second week of data collection and then again using a total number of the 18 recess periods occurring in phase two and phase three. Stability values for analysis were calculated by averaging each participant's perception of competence scores for week 1, week 2 and week 4. Examination of gender differences involved running a Repeated Measures ANOVA as well as Independent Samples T-tests to further identify any differences that existed between the means found for the questions previously investigated.

CHAPTER 4

Results and Discussion

The primary purpose of this study was to investigate the relationship between children's perceptions of competence on playground activities and their activity choices made on the school playground at recess. In addition to perceptions of competence, perceived importance and its relationship to activity participation was also examined. In addition, three assessments of perceptions of competence over a three-week period allowed for the determination of the stability of this construct. In conjunction with these three investigations, gender differences were also studied. Finally, the methodological question of feasibility of increased self-administration of the ADL - PP self-report instrument (Watkinson & Causgrove Dunn, 1999; Watkinson et al., in press) was addressed.

Analyses of group and individual findings are displayed and discussed in the following section of this thesis. Results will be reported and then discussed by section.

Perceptions of Competence and Activity Choices

Group Results

In order to determine the relationship that existed between perceptions of competence and choosing to engage in activities on the school playground, perceptions of competence scores on each activity were averaged for each of three levels of engagement. Averages were calculated for each child on activities not chosen at all, activities engaged in less than 1/3 of the potential recesses (infrequently chosen), and activities engaged in 1/3 or more of the potential recesses (frequently

chosen) of the week following administration of the questionnaires. Thus, overall averages of perceptions of competence were calculated for the three levels of activity participation (not chosen, infrequently chosen and frequently chosen). The first phase of data collection involved 6 potential recess periods. The following two phases (week two and week three) each included 9 potential recesses. The results of these calculations are displayed in Table 1 and Table 2. The first perceived competence questionnaire was administered at the beginning of the first week of data collection. No recess recordings had been made using the ADL - PP at that point. The second assessment of perceived competence was made at the beginning of the second week of the study, following one previous week of ADL - PP recordings. Statistical analyses were run for the first and second week of data collection.

Table 1. Means and Standard Deviations of Groups Perceptions of Competence Scores for Week 1 (6 recesses)

	N	M	SD
Activities Not Chosen	14	4.087	.499
Activities Infrequently Chosen	11	4.485	.625
Activities Frequently Chosen	14	4.561	.468

Table 2. Means and Standard Deviations of Groups Perceptions of Competence Scores for Week 2 (9 recesses)

	N	M	SD
Activities Not Chosen	13	3.995	.557
Activities Infrequently Chosen	12	4.477	.631
Activities Frequently Chosen	13	4.767	.333

Repeated measures ANOVA tests revealed that, for both weeks, a significant difference was evident in mean perceptions of competence. Application of the Wilk's lambda multivariate F-test with an alpha level of .05, run for week one and two, showed statistical significance, $F(2, 9) = 10.87$, $p < .004$ and $F(2, 10) = 16.03$, $p < .001$. Comparisons between the mean perceptions of competence scores on activities not chosen, activities chosen infrequently and activities chosen frequently were made using paired samples t-tests. A total of 3 paired sample t-tests were performed, with a Bonferroni correction of $p = .017$ employed to protect against a Type 1 error. The analysis clearly revealed significant differences on two of the comparisons. A significant difference resulted between the mean perceptions of competence scores on those activities not chosen and those activities chosen infrequently, and between activities not chosen and those chosen frequently. No significant differences were found when comparing the mean perceptions of competence scores for those activities chosen infrequently and those chosen frequently. Perceptions of competence were found to be different for those activities not chosen versus those

chosen, but the frequency of engagement did not appear to matter. The outcome of these analyses can be viewed in Tables 3 and 4.

Table 3. Paired Samples T-Test for Comparisons on Perceptions of Competence Scores (Week 1)

Pairs	Mean Difference	t	df
Pair 1	-.447	-3.025*	10
Pair 2	-.474	-5.638*	13
Pair 3	-.273E-02	-.207	10

Note. Pair 1 = mean perceptions of competence scores on activities not chosen vs. activities infrequently chosen. Pair 2 = mean perceptions of competence scores on activities not chosen vs. activities frequently chosen. Pair 3 = mean perceptions of competence scores on activities infrequently chosen vs. activities frequently chosen. ***p < .017**.

Table 4. Paired Samples T-Test for Comparisons on Perceptions of Competence Scores (Week 2)

Pairs	Mean Difference	t	df
Pair 1	-.468	-4.090*	11
Pair 2	-.772	-6.299*	12
Pair 3	-.298	-2.373	11

Note. Pairs listed are the same as for Table 2. ***p < .017**.

In addition to investigating the perceptions of competence scores separately for week one and week two of data collection, the relationship between perceptions of competence and choice was observed over an extended number of recess periods.

Using the participant's perceptions of competence scores from week 2, they were again analyzed but this time using participants' total ADL – PP self-reports for the following two weeks of recesses, totalling a possible number of 18 recess periods. Categories of choice frequency were defined as before with one third of potential recesses (6) distinguishing between the infrequent and frequently chosen categories. The results of this analysis may be viewed in Table 5.

Table 5. Means and Standard Deviations of Groups Perceptions of Competence Scores (18 possible recess periods)

	N	M	SD
Activities Not Chosen	13	3.964	.552
Activities Infrequently Chosen	13	4.588	.403
Activities Frequently Chosen	13	4.858	.228

Repeated measures ANOVA and paired samples t-tests were used to examine this relationship. With an alpha value of .05 the repeated measures ANOVA revealed significance with $F(2, 11) = 18.98$, $p < .0001$. This indicated the presence of significant differences. To locate those differences three paired samples t-tests were run, again with a Bonferroni correction of $p = .017$. The results of this analysis can be reviewed in Table 6. Similar to the findings from each of the first two weeks, significant differences were apparent for activities not chosen and activities chosen (both infrequently and frequently). However, unlike the outcomes from the previous analyses, t-tests showed that there was a significant difference between perceptions of

competence for activities infrequently chosen versus those frequently chosen. This third pair was now also seen to reflect a significant difference. This difference between mean perceptions of competence on activities chosen infrequently and frequently demonstrated that over a longer period of time, the relationship between mean perceptions of competence and choice appeared to emerge more clearly.

Table 6. Paired Samples T-Test for Comparisons on Perceptions of Competence Scores (18 possible recess periods)

Pairs	Mean Difference	t	df
Pair 1	-.6241	-5.549*	12
Pair 2	-.8942	-6.404*	12
Pair 3	-.2702	-3.288*	12

Note. Pairs are same as listed above in previous tables. *$p < .017$.

Discussion of Group Results

The Eccles et al. (1983) model of Expectancy-Value postulates that there is a link between task choice and performance expectations. She and her colleagues argue that these performance expectations are based upon perceptions that one has regarding competence or ability in a specified area. In other words, perceptions of competence are somewhat tied to the behavioural choices made by individuals. Harter's (1978) Competence Motivation theory also advocates a relationship between perceptions of competence and one's motivation to choose certain tasks. Thus, those who perceive themselves to be highly competent or capable at a certain skill will engage in, persevere longer and sustain interest in that skill. Children select

achievement tasks that demonstrate their competence, and avoid tasks that demonstrate their incompetence (Roberts et al., 1981).

The findings of the present study support the theories of both Eccles et al. (1983) and Harter (1978) that contend a relationship exists between perceptions of competence and activity choices. Analysis of the data collected in each of the first and second week illustrated a significant difference between mean perceptions of competence scores on activities not chosen and activities in which the children engaged. Mean perceptions of competence scores were found to be significantly higher on those activities chosen by participants than those activities not chosen. In other words, the children felt that they were better on those activities that they did than on those activities that they did not do. This type of evidence supports the assertion that children choose and participate in activities that they feel they are good at, and they do not participate in, or avoid, those activities in which they feel they are not as competent.

The design and time frame of the study permitted the same relationship to be examined over an extended two-week period (including phases 2 and 3). Thus, the frequency of participation became a more meaningful variable than in either of the one-week segments which were restricted to 6 or 9 recess periods. Analysis of the mean perceptions of competence scores and activity choices over 18 possible recess periods revealed a further, more detailed relationship. Paired samples t-tests demonstrated that in this extended period of study, significant differences were evident between all three pairs tested. As before, mean perceptions of competence scores for activities not chosen were significantly lower than the scores for activities

chosen. However, in addition, the scores for activities done 1/3 or more of the time (frequently) were also found to be significantly higher than the mean perceptions of competence scores for activities done less than 1/3 of the time (infrequently). These types of results suggest that the longer one's activity choices are observed/recorded the greater the observed relationship between perceptions of competence and the behaviour of choice. It also suggests that if frequency of choice is to be a meaningful variable, data may need to be collected in a longitudinal manner.

Individual Results

An examination of the results of individuals indicates that there are a variety of different profiles for the relationship of perceptions of competence to activity choice. Some individuals reflect the profile suggested by the aggregate results. Participants A and B are typical of this profile. However, there were some individuals that displayed results that did not agree with the group findings (e.g. participants C and D). The tables below illustrate individual mean perceptions of competence scores for the first week of data collection (Table 7), the second week (Table 8), and the scores for combination of weeks one and two of data collection (Table 9).

Table 7. Mean Perceptions of Competence Scores for Individuals (Week 1)

Participant	Activities Not Chosen	Activities Infrequently Chosen	Activities Frequently Chosen
A	3.81	4.75	5.00
B	4.39	5.00	5.00
C	4.57	4.00	5.00
D	4.67	5.00	4.80

Table 8. Mean Perceptions of Competence Scores for Individuals (Week 2)

Participant	Activities Not Chosen	Activities Infrequently Chosen	Activities Frequently Chosen
E	4.15	5.00	5.00
F	3.80	4.63	4.83
G	5.00	5.00	5.00
H	3.53	3.20	4.08

Table 9. Mean Perceptions of Competence Scores for Individuals (18 possible recess periods)

Participant	Activities Not Chosen	Activities Infrequently Chosen	Activities Frequently Chosen
I	3.39	4.29	5.00
J	3.79	4.67	5.00
K	4.72	4.91	5.00
L	5.00	5.00	5.00

Data shown in these tables depicts the differences that were noted between perceptions of competence scores among the three levels of choice. Observation of individual mean perceptions of competence scores for participants A and B on week one, and participants E and F on week two showed a difference. This difference was apparent between scores on those activities not chosen at all and those activities chosen (whether it was infrequently or frequently). The individual's perceptions of competence scores that resulted for activities chosen infrequently and activities chosen frequently did not appear to be that different. Individual results gathered from participants C and D on week 1 (Table 7) and G and H on week 2 (Table 8) did not

follow this same pattern. Participant C was seen to have quite a high mean perceptions of competence score for activities not chosen, a lower mean score for activities chosen infrequently and then the highest possible score (5) for activities chosen frequently. Participants D (Table 7) and L (Table 9) maintained high mean perceptions of competence scores across all three levels of choice. Finally, participant H (Table 8) illustrated a different pattern of scoring, with relatively low perceptions of competence scores across all three levels of engagement.

Once mean perceptions of competence scores were used against a possible 18 periods of recess participation not only did a difference exist for activities not chosen and activities chosen, but a difference appeared among those activities chosen infrequently and those chosen frequently for participants I and J. Results from individual K reflected a similar pattern, however discrimination between the three levels of choice was not strong. Participant L saw himself as highly competent on all activities, regardless of whether or not he ever chose to do them.

Discussion of Individual Results

Analyses of the group averages for perceived competence scores showed significance for the differences between scores on activities not chosen and activities chosen. Further investigation of individual results showed that this relationship was still evident for many individuals. However, there were some individuals with perceptions of competence scores that did not reflect the same relationship as the group findings. Individual data for many of the individuals (e.g. participants A, B and F) collected for weeks one and two demonstrated a relationship between perceptions of competence scores and activities chosen. Here we see on an individual

level, support for the Eccles et al. (1983) and Harter (1978) models that propose an individual will choose to participate in activities where one can demonstrate ability and avoid situations where ability is perceived to be lacking. Higher perceptions of competence scores on activities chosen versus lower scores on activities not chosen illustrate that these individuals participated in activities in which they felt they were somewhat competent.

Individuals such as participants C and D on week 1 and G and H on week 2 did not have mean perceptions of competence scores consistent with the previously stated theories. In particular, participant C had a high mean perceptions of competence score for activities not chosen, with a lower score on those activities infrequently chosen. During an interview, participant C was questioned as to why he had high perceptions of competence scores on many of the activities he did not choose to do. Some of his reasoning for such results was illustrated in the following passage.

Interviewer:	*Well then, you have some things that are really important to be able to do and then you also have really high scores on how good you think you are. So why do you think you never did them?*
Participant A:	*Well the reason I never do them is, well...how should I say this? Well I'm not very good at them and I try to do it, it really doesn't usually work.*
Interviewer:	*But here you say that you are pretty good at it. This is your score of how good (point to participant's completed Perceptions of Competence Questionnaire), so you say you are really good at swinging on a swing?*
Participant A:	*Oh yah. I can go really high.*
Interviewer:	*Standing on a swing you're pretty good, swinging with a partner you've never tried and doing the underduck you're really good. Jumping off the swing you're really good. So you just usually don't do these activities?*
Participant A:	*Well, last year I used to race to the swings and I do but they're usually taken up so that's why I stopped.*

From these responses it may be understood that this individual had high perceptions of competence scores on the things not chosen because those activities were not activities that he had never done before but ones he had in fact participated in before. However, situational variables on the school playground such as equipment availability did not allow him to choose such activities for the observed week of data collection.

For phase two of data collection, participant H was shown to have quite low perceptions of competence scores on activities not chosen and even lower scores on activities infrequently chosen. Mean perceptions of competence scores for activities frequently chosen were somewhat higher than for activities not chosen and activities chosen infrequently, however they were still low when compared to other individuals.

Interviewer:	*Okay, so do you think you can be good at something, but not like to do it?*
Participant H:	*Yah. I don't like to climb up a cargo net and everyone is good at that.*
Interviewer:	*So you're good at it but you don't really like to do it.*
Participant H:	*Yah.*
Interviewer:	*Do you think you can like to do something and not be good at it?*
Participant H:	*Yah, like balancing on a balance beam, I keep falling off.*
Interviewer:	*But do you like to do it?*
Participant H:	*Yah. I keep on trying and trying.*
Interviewer:	*So there are things you like to do but you're not very good at?*
Participant H:	*Right.*
Interviewer:	*Is it more important to do the things you are good at, or to do the things your friends do at recess?*
Participant H:	*Uhm, playing with my friends and getting a break.*

These types of responses give us the opportunity to see that a child low in perceived competence may still participate because he or she is primarily motivated by social-related reasons (Klint & Weiss, 1987). In this situation, participant H's perceived

competence on these skills did not appear to be much of a determining factor for choice.

Again, as with the group results, it was not until the possible 18 recess periods were used to demonstrate the participant's activity choices, that a difference appeared among activities chosen infrequently and activities chosen frequently. Observation of much of the individual data (on the 18 possible recess periods) showed that there was a difference between mean perceptions of competence scores on all three levels of choice.

Participants I and J demonstrate a similar pattern of scoring as do the group results. Mean perceptions of competence scores for these individuals are different across all three levels of engagement. Discussions with participant J illustrate that she participated in those activities in which she felt competent.

Interviewer: *When you go out do you do the stuff that you want to do, or is it the stuff your friends are doing?*

Participant J: *Most of the time it's what I want to do and my friends just follow me around and do the same thing.*

Interviewer: *Okay, do you think it is more important to do the things you are good at, or to do the things your friends do at recess?*

Participant J: *The things that I am good at because my friends don't usually go off and do something else. They do what I'm good at with me because they're usually good at what I'm good at.*

Not all individuals within the study maintained perceptions of competence scores that reflected the pattern discovered through the group findings. Both participants K and L held high perceptions of competence scores across all three levels of activity engagement. These individuals rated themselves high on almost every activity listed on the Perceptions of Competence Questionnaire. It was

apparent that they felt that they were good at every skill they were faced with when out on the school playground at recess.

With perceptions of competence appearing to be lower for those activities not chosen or participated in, individual perceptions of competence scores for most participants demonstrated that those activities chosen by individuals are activities they feel they are somewhat good at. The extended length of time for activity recording resulted in a stronger observed relationship between perceptions of competence and those activity choices made on the school playground at recess. However, even in this situation it was evident that any profile based on the aggregate data may not reflect the pattern of a given individual. Thus, it would seem important that an individual's profile be determined when information about that person's needs or behaviours are considered.

Perceived Importance and Activity Choices

Group Results

The Perceived Importance Questionnaire was utilized to ask each individual "How important it is for you to be able to do this?" This instrument was administered at the beginning of the third week (phase three) of data collection. The activity choices that were made in the week that followed were used to investigate the above-mentioned relationship. As was done with perceptions of competence, participant's perceived importance scores were averaged across activities. The mean perceived importance scores were calculated for those activities never chosen, and activities chosen less than 1/3 of the time (infrequently) and those chosen 1/3 or more of the

time (frequently). A total of 9 recess periods took place in this phase. The results of these calculations are displayed in Table 10.

Table 10. Means and Standard Deviations of Groups Perceived Importance Scores

	N	M	SD
Activities Not Chosen	14	2.535	1.054
Activities Infrequently Chosen	14	3.268	1.438
Activities Frequently Chosen	14	4.164	.735

A repeated measures ANOVA revealed that a significant difference was evident among the means of the perceived importance scores for activities not chosen, activities chosen infrequently and activities chosen frequently, $F(2, 12) = 16.32$, $p < .0001$. Paired samples t-tests, performed with a Bonferroni correction of $p = .017$, revealed significant differences between two of the pairs. This significance was discovered to follow the same pattern as that found earlier with perceptions of competence (see Table 11). Differences existed between the mean perceived importance scores on those activities not chosen and those chosen infrequently and frequently. No significant difference was found between mean perceived importance scores on activities done more or less frequently.

Table 11. Paired Samples T-Test for Comparisons on Perceived Importance Scores

Pairs	Mean Difference	t	df
Pair 1	- .733	-3.071*	13
Pair 2	-1.629	-5.569*	13
Pair 3	- .896	-2.623	13

Note. Pair 1 = mean perceived importance scores on activities not chosen vs. activities infrequently chosen. Pair 2 = mean perceived importance scores on activities not chosen vs. activities frequently chosen. Pair 3 = mean perceived importance scores on activities infrequently chosen vs. activities frequently chosen.

*$p < .017$.

Discussion of Group Results

The construct of task (achievement) value is assumed to be a quality of the task or activity that contributes to the increasing or declining probability that an individual will choose to do it. Eccles et al. (1983) maintain that there are four major components of subjective task values. However, Wigfield et al. (1992) found that during elementary school, children's subjective task values were less differentiated, and only two value components emerged in a confirmatory factor analysis of children's replies to items in sport, math, and reading domains. The two value constructs that emerged were interest and importance. Within the present study, importance was utilized to represent subjective task value. Specifically, importance was conceptualized as one's perceptions of how important it is to be able to do a certain activity.

One's expectancy-related beliefs and task values are proposed to independently influence one's choice of activity and behaviour in various task domains (Eccles et al., 1983). At very young ages, children have demonstrated the ability to maintain distinct beliefs about what they value versus what they are good at in certain domains. Even though these constructs are established as being distinct, they are both involved in determining one's choice of activity. Therefore, it is important to investigate the relationship between perceived importance and the behaviour of activity choice as well as perceived competence and activity choice. These factors are instrumental in determining whether or not participation in certain activities will take place and continue.

Findings from this investigation support the Eccles et al. (1983) Expectancy-Value model that illustrates subjective task values relating positively with the achievement behaviour of choice. Analyses disclosed a significant difference between mean perceived importance scores on activities not chosen at all and activities chosen, regardless of frequency of engagement. In other words, the children's perceived importance ratings were higher for the activities in which they chose to engage. Perceived importance scores were significantly lower on those activities that they never chose to participate in. In other words, the children felt that it was more important to be able to do those activities that they actually did do rather than those activities in which they did not participate at recess. These results provide support for the existence of a relationship between subjective task values and choice, however it does not inform us of the direction of the relationship. Does an individual choose a certain activity because it is valued, or does participating in a certain activity

result in it becoming perceived of as important? This question cannot be answered within the confines of this study. Further investigation would be needed to make claims on the existence and direction of a causal relationship.

Comparison of the actual means of the perceived importance scores to the perceived competence scores has illustrated that overall the scores for perceived importance are lower than those calculated for perceived competence across all levels of engagement. Even though the difference for perceived importance between the two different levels of choice appear to be large they were not found to be significant for the infrequently chosen and frequently chosen scores. Further examination of results revealed that large standard deviations may have resulted in a lack of statistical difference between those activities chosen infrequently and frequently. These large standard deviation scores represent a rather dispersed pattern of scoring on perceived importance across individuals.

Individual Results

Many of the individuals scoring patterns investigated within this study confirmed the group findings previously mentioned for perceived importance and choice. However, as was found with perceptions of competence, there were some individuals whose results were completely different than those found for the group. Table 12 displays some of these individual scores across the three levels of engagement.

Table 12. Mean Perceptions of Importance Scores for Individuals

Participant	Activities Not Chosen	Activities Infrequently Chosen	Activities Frequently Chosen
A	1.88	5.00	5.00
B	2.71	4.00	5.00
C	4.26	4.56	5.00
D	1.25	1.63	5.00

Some individual results (e.g. participants A and B) showed the most typical profile whereby a larger difference existed between perceived importance scores on activities not chosen at all and those activities chosen. Differences were much smaller for those activities infrequently chosen and those chosen frequently. Other individuals varied considerably from this trend. For example, participant C maintained high perceptions of importance scores across all three levels of activity engagement, and participant D held very little importance for any activities except those in which she participated frequently.

Discussion of Individual Results

The relationship between some of the individual perceived importance scores (e.g. participants A and B) gathered from this investigation and activity choice followed that of the Eccles et al. (1983) Expectancy-Value model. For those activities that the children in which chose to participate, results showed higher perceptions of importance scores than for those activities in which they did not participate. From this we may deduce that those children felt that some activities on the school playground were more important to be able to do than other skills, so they

chose to participate in them. This relationship may also work in a direction that has children participating in certain activities that they like, and these activities then become important as a result of their participation. As was stated earlier, the causal direction of this relationship is beyond the scope of this study. Nonetheless, among some individuals the relationship does appear to exist.

Interviewer:	*What makes an activity important to you?*
Participant B:	*Uhm, the fact that it might be important in your school work.*
Interviewer:	*What about for recess? When we look here (at the sheet) there are things you said are important. For example, you have talk with friends, jumping, running, etc.*
Participant B:	*Yah, talk with friends to get to know them a bit better is important.*
Interviewer:	*Okay, and you have running as being really important.*
Participant B:	*Yah, 'cause if you can't run when you're at an old age you won't be able to do anything.*
Interviewer:	*Okay good, and climbing up and down the cargo net and equipment, why is that important?*
Participant B:	*'Cause so like it's...I don't know it's just fun.*
Interviewer:	*Fun, is that why it's important to you?*
Participant B:	*Yah, and in tag if you were trying to run away and you don't like climbing up the cargo net or on the equipment and you're 3 or 4 metres away from whoever is it, then you'd have to run up on those.*
Interviewer:	*Right, so if you couldn't do that you'd have nowhere to run and you'd get caught. Is that what you mean?*
Participant B:	*Yah, that's right.*

In addition to those individuals who maintained high perceptions of importance only on the activities they chose there were individuals who did not follow this pattern. Participant C gave most activities (chosen or not) high perceived importance scores. An interview with this individual involved some questioning based on his results.

Interviewer:	*You have some things that are really important to be able to do and then you also have really high scores on how good you think you are. So why do you think you never did them?*

Participant C: *Well the reason I never do them is, well...how should I say this? Well I'm not very good at them and I try to do it, and it really doesn't usually work.*

Interviewer: *What makes something important to you?*

Participant C: *Something important? I don't know, it's just well something important. Like sports are important to keep up your health that's why I said it's really important to me, 'cause I know that.*

Interviewer: *So let's say for example these recess activities that you chose as important... why do you think they are important?*

Participant C: *Uhm, when I say they are important it is to keep up well, you exercise you get how you want, you're fit and stuff. If you do those things then I think they're important.*

These types of responses illustrate that this individual believed that health benefits were what made an activity important and therefore he chose it. There also seems to be some confusion for this individual between the questions 'What are you good at?' and 'How important is it for you to be able to do this?'

Participant D gave different perceived importance responses than all the other individuals previously mentioned. This individual rated those activities she participated in frequently with high perceived importance. Mean scores calculated for this individual showed no difference between those activities not chosen and those chosen infrequently.

Interviewer: *Now let's talk about importance. How come hardly anything is important for you to do at recess except for a couple of things?*

Participant D: *Well because I don't like most of the things. I only like a few things. I like walking, running, walking on a balance beam.*

From these responses, it is apparent that this individual associated importance with liking. In order for something to be important to her it has to be something that she likes. This may also indicate that the source of importance is personal rather than external such as health or popularity of the activity among friends or others.

Stability of Children's Perceptions of Competence

Group Results

The Perceptions of Competence Questionnaire was administered at the beginning of the first and second week of data collection, and then again at the very end of the study. The questionnaire was first administered before any recess recordings were made on the ADL - PP report form. The second assessment of perceptions of competence was completed at the start of the second week of data collection, following the first week of ADL - PP recordings. The final perceived competence questionnaire was completed in the fourth week of data collection. This was the last instrument administered to the participants.

An average perceptions of competence score (across activities) was calculated for each participant, from each administration of the questionnaire. From this, a total average was generated for the group and three overall averages, one for each administration, were used for the analyses. The results of these calculations are presented in Table 13.

Table 13. Means and Standard Deviations of Perceptions of Competence Scores for First, Second and Third Administration

	N	M	SD
Time 1	14	4.223	.442
Time 2	13	4.240	.447
Time 3	12	4.230	.601

A repeated measures ANOVA ($p = .05$) comparing these means indicated no significant differences, $F(2, 9) = .698$, $p < .522$.

Discussion of Group Results

Averaged perceived competence scores were investigated and found to remain stable over the three separate administrations of the perceived competence questionnaire. No significant differences were discovered between the groups mean perceptions of competence scores. Therefore, we can conclude that the group scores remained stable over the course of this investigation. This finding infers that such perceptions were not subject to serious fluctuations over the three-week duration of the study. This is an important characteristic of such perceptions because it implies a certain robustness to how children this age perceive their competence across a wide range of activities. This result cannot yet be generalized to children of other ages.

From a methodology perspective it also infers that a single assessment of perceptions of competence should be sufficiently representative of the construct for children of this age. Thus, if replicated, these results suggest that researchers should not need to be concerned about these values fluctuating greatly over a period of several weeks. This assumption may be less appropriate if interventions are employed which may affect such perceptions.

Individual Results

The individual results derived from the children investigated in this study support the group findings discussed above. Table 14 illustrates the stability that was found among individual perceptions of competence scores throughout three separate administrations. As can be noted from the table, despite reflecting different levels,

the children's perceptions of competence scores remained very similar over the three Perceptions of Competence Questionnaires.

Table 14. Mean Perceptions of Competence Scores for Individuals over Three Assessments

Participant	Time 1	Time 2	Time 3
A	4.96	5.00	4.98
B	3.70	3.60	3.44
C	4.20	4.37	4.53
D	4.67	4.64	4.69

Discussion of Individual Results

As was found with the group results, individual results displayed stable competence perceptions over the three separate administrations of the Perceptions of Competence Questionnaire. These types of results help to demonstrate that children of this age maintain fairly stable perceptions of competence/ability. A factor to be considered here is that these scores represented means across a number of activities. There was certainly more variation when the unit of analysis was a specific activity.

Gender Differences

Group Results

Repeated measures ANOVA, with an alpha value of $p = .05$, and independent samples t-tests, with a Bonferroni correction of $p = .017$, were conducted to compare gender on the perceived competence and perceived importance scores collected.

Mean averages were calculated for both boys and girls on perceptions of competence scores for the first week (see Table 15), and second week (see Table 16).

Table 15. Means and Standard Deviations for Boys and Girls Perceived Competence Scores (Week 1 = 6 Recess Periods)

	Gender	M	SD
Activities Not Chosen	Boy	4.186	.436
	Girl	3.989	.572
Activities Infrequently Chosen	Boy	4.513	.366
	Girl	4.469	.763
Activities Frequently Chosen	Boy	4.580	.357
	Girl	4.543	.588

Table 16. Means and Standard Deviations for Boys and Girls Perceived Competence Scores (Week 2 = 9 Recess Periods)

	Gender	M	SD
Activities Not Chosen	Boy	4.354	.438
	Girl	3.577	.351
Activities Infrequently Chosen	Boy	4.883	.181
	Girl	4.070	.669
Activities Frequently Chosen	Boy	4.853	.234
	Girl	4.667	.422

Analyses run on the first week of data showed no significant differences between the mean perceptions of competence scores for boys and girls on activities not chosen, activities chosen infrequently, or activities chosen more frequently. However, application of the Wilks' Lambda multivariate F-test on the second week of data collection revealed a significant main effect for gender on mean perceptions of competence, $F(2, 9) = 8.42$, $p < .009$. The comparison of mean scores for the two levels of activities chosen showed no significance for gender (see Table 17). However, a significant interaction for gender was evident with $p = .003$ (see Figure 3). Independent samples t-tests, with a Bonferroni correction of $p = .017$, showed a significant difference between the mean perceptions of competence scores for boys and girls on those activities not chosen. Descriptive statistics illustrated that the boys perceived competence scores were significantly higher than the girls' scores on those activities not chosen. In other words, the mean differences for boys' and girls' perceptions of competence scores were not constant across the three levels of choice.

Table 17. Independent Samples T-Tests for Gender Comparisons on Perceptions of Competence Scores (Week 1)

	Mean Difference	t	df
Activities Not Chosen	.197	.725	12
Activities Infrequently Chosen	4.393E-02	.107	9
Activities Frequently Chosen	3.714E-02	.143	12

Note. *$p < .017$.

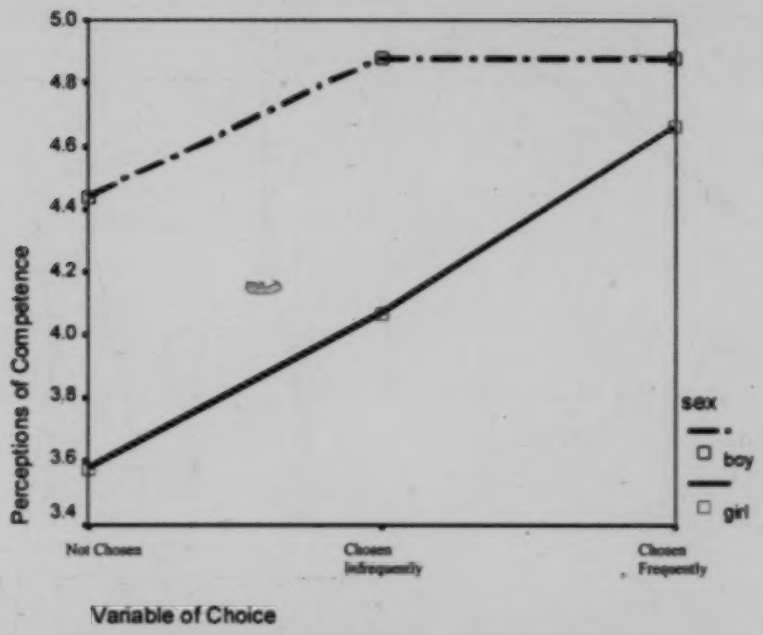

Figure 3. Line graph illustrating significant interaction among boys and girls responses on perceived competence questionnaires for week 2 of data collection.

Further analyses run on perceptions of competence averages (see Table 18 for means and standard deviations) accumulated over the second and third week of data collection (possible 18 recess periods) showed a similar relationship for gender. Again, a significant main effect for gender was evident when a repeated measures ANOVA was completed resulting in $F(2, 10) = 6.14$, $p < .018$. A significant interaction was also apparent with a p value of .003 (see Figure 4). Independent samples t-tests, with a Bonferroni correction of $p = .017$, established that a significant difference existed among mean perceptions of competence scores for boys and girls only on activities that were not chosen. The results of these analyses can be found in Table 19.

Table 18. Means and Standard Deviations for Boys and Girls Perceived Competence Scores (18 Possible Recess Periods)

	Gender	M	SD
Activities Not Chosen	Boy	4.331	.423
	Girl	3.535	.328
Activities Infrequently Chosen	Boy	4.695	.413
	Girl	4.463	.388
Activities Frequently Chosen	Boy	4.919	.125
	Girl	4.787	.308

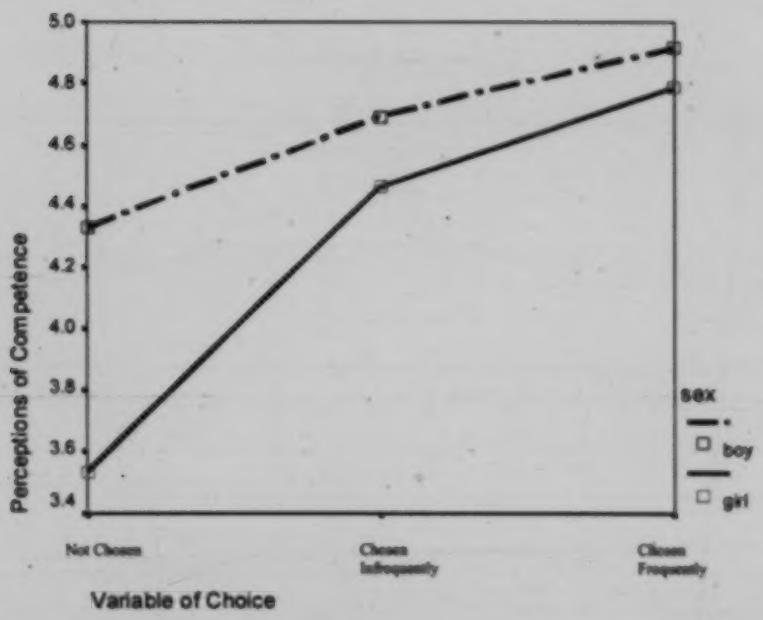

Figure 4. Line graph illustrating significant interaction among boys and girls responses on perceived competence questionnaires for weeks 2 and 3 of data collection (possible 18 recess periods).

Table 19. Independent Samples T-Tests for Gender Comparisons on Perceptions of Competence Scores (Week 2)

	Mean Difference	t	df
Activities Not Chosen	.778	3.491*	11
Activities Infrequently Chosen	.813	2.875	10
Activities Frequently Chosen	.186	1.006	11

Note. *$p < .017$.

In addition to investigating gender differences over the three levels of choice, gender differences were also analysed for the total average of perception scores. In other words, perceptions of competence scores were averaged for all activities (chosen or not) for both boys ($M = 4.736$, $SD = .252$) and girls ($M = 4.104$, $SD = .433$). Independent samples t-tests were run with results from the first week of data collection yielding no significant differences between mean perceptions of competence scores for boys and girls. However, for the second week of collection a significant difference was evident between boys and girls on perceptions of competence scores (see Table 20 for descriptives and Table 21 for t-tests). The third week of data collection results reflected those results found for the first week and displayed no significant differences for mean perceptions of competence scores for boys ($M = 4.510$, $SD = .551$) and girls ($M = 3.948$, $SD = .548$).

Table 20. Means and Standard Deviations for Boys and Girls Mean Perceptions of Competence on All Activities (Week 2)

	N	M	SD
Boy	7	4.522	.363
Girl	6	3.911	.283

Table 21. Independent Samples T-Test for Gender Comparisons on Total Perceptions of Competence Scores (Week 2)

	Mean Difference	t	df
P of C average	.611	3.333*	11

Note. *p < .050

Investigation regarding gender and the relationship between perceived importance and choice showed no significant differences. Repeated measures ANOVA were run and analyses displayed no significant differences. Boys and girls did not have statistically significant differences on their perceived importance scores across the three levels of engagement. Independent samples t-tests were run for total perceived importance scores for boys and girls and again, no significant differences were found.

The stability of both the boys and girls mean perceptions of competence scores were investigated separately. Repeated measures ANOVA, with an alpha level of .05, were performed in order to investigate the stability for boys and for girls. Results supported stability of perceptions of competence for boys, $F(2, 4) = 3.283$, $p < .143$, and for girls, $F(2, 3) = .306$, $p < .757$. Thus, the stability of perceptions of competence was not gender-dependent. These results are positive in that they follow

the total group findings, indicating these perceptions to be a stable construct among both genders. However it is important to note that the present study used a small sample of only seven males and seven females.

Discussion of Group Results

The results from this investigation do not mirror the general findings produced from previous research. The majority of studies conducted have shown that gender differences do exist for perceptions of competence with boys having higher competence perceptions than girls (e.g. Eccles & Harold, 1991; Marsh, Craven & Debus, 1991). However, the preceding research used much larger sample sizes (e.g. N = 73 males; 70 females) and the fact that the present study had a very small sample size may have affected results found. Results from the present investigation only showed significant gender differences on perceptions of competence scores for those activities not chosen. Boy's perceptions of competence scores were found to be significantly higher than girl's on those activities that were never participated in during the period in question. These results do reflect that literature indicating that boys feel that they are good at more activities than girls. With these findings specific to activities not chosen and chosen, we see that boys feel that they are good at activities even if they are activities that they never participate in. Whereas girl's perceptions of competence are lower on those activities they do not participate in. However, no significant gender differences were found on perceptions of competence scores for activities chosen infrequently and frequently.

It appears that when perceptions of competence were investigated according to activity choice patterns made by participants, the results did not reflect those of

previous research. All research conducted previously has used perceptions of competence scores independent of whether the scores utilized were on activities actually participated in by subjects. This preceding research has assessed boy's and girl's perceptions of competence irrespective of actual involvement. The present investigation yielded differentiated scoring patterns for those activities chosen and those not chosen by participants.

Males and females have been shown to rank the relative importance of certain activities differently (Wigfield & Eccles, 1992). However, findings from the present investigation did not follow these results as perceived importance scores were averaged across all activities. Had perceived importance scores been investigated separately across all activities perhaps the importance profile for boys and girls would have been different. Employing the means across all activities, the results of this study indicated that there were no significant gender differences on the valuing (perceived importance) of activities found on the ADL - PP self-report form.

Viability of ADL – PP Self-Administration

Previous research employing the ADL - PP self-report instrument (Watkinson & Causgrove Dunn, 1999; Watkinson et al., in press) has utilized a method whereby the children complete the instrument under extensive verbal guidance from an adult. This requires an individual, who is familiar with the instrument, to read through each activity item by item with the children. It has been assumed that children of young ages may be unable to accurately complete the instrument without the assistance of an adult. Future use of this instrument could be enhanced if increased self-administration by the participants was possible. However, investigation was needed

to ensure that there was no significant loss of accuracy with the information provided by the participants. One of the purposes of this study was to determine the viability of self-administration of this instrument over an extended period of time.

The first three administrations of the ADL - PP were done with extensive verbal guidance from the researcher. Participants were then required to complete the ADL - PP on their own for the remainder of the study. The investigator was present for all administrations of the ADL - PP form and it was still completed immediately following recess periods. However, no direct guidance was provided and children completed it at their own pace before joining in regular classroom activities.

Results

Observations of children's activity on the school playground were conducted by trained observers at various times during the study (n =16). An agreement percentage between what the observer saw the child do and what the child circled on the ADL - PP self-report form was calculated using the following formula: [# activities agreed on/ (# activities disagreed on + # of activities agreed on)] x 100. The number of children observed on any given day varied, ranging between one and four. Agreement values between observer and participant for the period involving extensive verbal guidance administrations are displayed in Table 22. Table 23 illustrates the agreement percentages for the rest of the first week (administrations without verbal guidance), and values are given for the second and third phases of data collection (see Table 24 and Table 25).

Table 22. Daily Agreement Percentages between Observer and Participant - Verbal Guidance of ADL - PP (3 administrations)

Day 1	Day 2	Day 3
75	86	73
64	71	85
89	80	67
100		

Note. Blank spaces = no observations made

Table 23. Daily Agreement Percentages between Observer and Participant – Self-Administration of ADL - PP (Week 1)

Day 4	Day 5
81	80
89	77
88	91

Table 24. Daily Agreement Percentages between Observer and Participant – Self-Administration of ADL - PP (Week 2)

Day 6	Day 7	Day 8	Day 9	Day 10	Day 11
86	69	81	86	100	86
100	80	79	71		78
78		75	80		
			71		

Table 25. Daily Agreement Percentages between Observer and Participant – Self-Administration of ADL - PP (Week 3)

Day 12	Day 13	Day 14	Day 15	Day 16
88	100	100	100	100
100	100	86		
100	100	100		
70	86	93		

Discussion of Results

Percentage of agreement results gathered for the first three administrations of the ADL - PP ranged in value from 64 to 100%. During the period when children self-administered the instrument, percentage of agreement results between what the observer saw and what the child reported doing ranged from 69 to 100%. Over the course of the three data collection phases, responses provided by the participants did not systematically decrease. With no apparent decrease in the accuracy of responses given by participants, it seems that this instrument, over time, can be self-administered by children in grades 3 and 4.

It is important to consider that, in this study, when the children self-administered the ADL - PP, it was in the presence of an adult who was associated with the study. Although extensive guidance was not provided following the first three administrations of the instrument, brief reminders about the children focussing solely on the recess just completed were often offered. The degree to which the investigator's presence and brief verbal cues actually assisted in the maintenance of good observer – child agreement is not known. It is, however, evident that this

instrument can be completed accurately and effectively by children of this age under relatively loose adult supervision and guidance.

CHAPTER 5

Conclusion

This study sought to determine the relationship between children's perceptions of competence on a variety of playground skills or activities and engagement in those activities during recess. A secondary purpose was to explore the relationship between perceived importance and activity choice on the school playground. In addition to these relationships, the stability of the participant's perceptions of competence as well as gender differences among results were also investigated. Lastly, the viability of self-administration of the ADL - PP self-report instrument by children was tested.

Average perceptions of competence scores were calculated for each of the three different levels of engagement (not chosen at all, infrequently chosen, and frequently chosen) for phase one and two of data collection. Paired samples t-tests revealed that a significant difference was evident for perceptions of competence scores on activities not chosen and those activities chosen infrequently or frequently. In other words, the children in this study felt they were more competent on those activities that they did than on those activities that they did not do. These results provide support for the Eccles et al. (1983) and Harter (1978) models of achievement motivation, showing that children tend to participate in those activities in which they feel competent and avoid those activities in which they do not feel as competent. Paired samples t-tests run on average perceptions of competence scores calculated for the combined phases two and three of data collection (18 possible recesses) yielded significant differences across all three levels of engagement (not chosen, infrequently

chosen, frequently chosen). These results indicate that the longer one's activity choices are recorded/observed the more definitive the observed relationship between perceptions of competence and the behaviour of choice. Hence, a more extensive mapping of a child's activity patterns may reveal that not only do children simply engage in those activities in which they feel more competent, they appear to engage in them more frequently.

Perceived importance scores were collected from participants during the third phase of data collection. A mean perceived importance score was calculated across activities for each level of engagement. Paired samples t-tests revealed significant differences between the mean perceived importance scores for those activities not chosen and those activities chosen (infrequently and frequently). These results reflected a pattern similar to that of the perceived competence scores for the first two phases of data collection. Children's perceived importance ratings were higher for the activities in which they chose to engage. Participants from this study felt that it was more important to be able to do the activities that they actually did do rather than those activities that they did not participate in at recess. These results also provide support for the Eccles et al. (1983) Expectancy-Value model that claims one's perceptions of how important it is to do well on an activity contributes to the increasing likelihood that individual will choose to do it.

Competence perceptions were found to remain stable over the three separate administrations of the perceived competence questionnaire. A repeated measures ANOVA comparing perceived competence means revealed no significant differences across data collection phases. These findings infer that children of this age group

retain fairly stable competence perceptions averaged across a wide range of activities. Therefore, from a methodological perspective, it also infers that a single assessment of perceptions of competence should be a sufficient representation of the construct for children of this age.

Gender differences across the constructs of perceived competence and importance were also investigated. Independent samples t-tests for perceptions of competence scores in the second phase showed a significant gender difference. Boys had higher perceived competence scores than the girls on those activities not chosen at all. Results showed that overall the boys maintained high competence perceptions across all three levels of engagement whereas the girls showed more of an incremental increase across the levels of engagement. Repeated measures ANOVA on perceived importance scores revealed no significant gender differences. However, previous research has found males and females to rank the relative importance of specific activities differently. A limitation of this study was that comparisons were made using averaged perceptions of importance scores across all activities, rather than the individual scores for each activity. These analyses yielded no differences between boys and girls whereas a comparison across certain selected activities may have yielded different results. In addition to the constructs of perceived competence and importance, gender differences among stability of perceived competence was investigated. Repeated measures ANOVA showed no significant differences in perceptions of competence scores for boys or girls across the three administrations of the Perceptions of Competence Questionnaire, demonstrating that perceptions of competence are a stable construct among both genders at this age.

The final purpose of this study was to determine the viability of self-administration of the ADL - PP instrument over a period of several weeks. Previous research utilizing this instrument has employed a method whereby children complete the instrument only a few times, and under extensive verbal guidance. Increased self-administration of this instrument has the potential to decrease the amount of time it would take to complete the instrument as well as increase convenience for those wanting to use it within their classroom. Within this study, agreement percentages were calculated between what observers saw the children do and what the children reported doing. These agreement values did not decrease as the children increasingly self-administered the ADL - PP. In fact, agreement percentages started to increase as the data collection phases progressed. These types of results suggest that the children maintained reporting accuracy even when self-administering the instrument over this extended period of time.

Analyses of individual cases with respect to the above purposes showed that there were many who followed the group findings and there were some who did not. Thus, while aggregate findings reflected the profiles of many individuals, other participants demonstrated unique and divergent patterns of perception and behaviour.

Suggestions for Future Directions

This investigation is one of the first that investigates the relationship between children's perceptions of competence and the behaviour of choice in a less structured environment, namely the school playground at recess. The Eccles et al. (1983) and Harter (1978) models of achievement motivation have focused on such achievement tasks as sports and academic subjects. This previous research investigating one's

motivation towards achievement behaviours has been lacking in the non-competitive, less adult-constrained settings. More extensive research is needed in these free choice settings, as achievement tasks cannot be restricted to only those more formal situations where adult constraint is the norm.

The very small sample size used in this study may have resulted in less powerful overall results. As is often the case, a study investigating the same relationship in a similar setting across a number of different grades and schools would be extremely beneficial. Not only would the larger numbers create greater statistical power, but also the relationships studied and the self-administration of the ADL - PP would be investigated across different age groups.

The ADL - PP instrument has only been employed a small number of times previous to this investigation. Adaptations to this instrument could involve removing some activities that the children never do. For example, children currently in the schools do not do activities like hopscotch and leapfrog anymore. A slightly updated version of this instrument could help decrease the time needed for administration/completion as well as keeping the children's attention by using only those activities that with which they are familiar.

Assessment of children's behaviour over a longer period of time as opposed to very few recess periods has been shown to give a more differentiated measure of the participation variable. Continued research in this area can benefit by extending the amount of time children's perceptions and behaviours are monitored and assessed.

Gender difference investigation on *specific* activities may have yielded significant differences between boys and girls. Previous research has demonstrated that value differences exist for boys and girls when certain activities are investigated.

A more extensive follow-up of qualitative interviews could be used to gain greater insight into the children's thoughts and meanings regarding questionnaire results.

Further testing of the viability of self-administration of the ADL - PP could involve a comparison of the effects of the teacher being the only presence in the classroom instead of the presence of the researcher in addition to the teacher. Such study should further bridge the gap in establishing this instrument as one which can yield valid results without requiring the presence of an adult specifically associated with the instrument. This knowledge could eventually result in protocols for the administration of the ADL - PP in field settings by teachers.

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APPENDIX A

Information Letter

Consent Form

Information Letter

Project Title: Children's Perceived Competence and Participation in Recess Activities

Dear Parent(s) or Guardian(s):

My name is Sarah Hilton and I am a second year Masters student at the University of Alberta in the Faculty of Physical Education and Recreation. I am conducting this study as part of my thesis under the supervision of Dr. Brian Nielsen.

Recess is an important and inevitable part of most children's lives. This is why we find it meaningful to understand why children choose to participate in certain activities on the school playground at recess. By investigating children's activity choices, their perceptions of how good they are on playground activities, and how much they value these activities, we expect to further understand this relationship. It is important to this study to have the participation of as many children in one class as possible. We would like to have your child participate in this study in order to allow us to investigate what motivates children at recess.

Collection of information will take place over a total time of about three weeks. The total time requirement for you child will be approximately 5-10 minutes every day for each week. We expect to see the time requirement diminish as the children become more familiar with the questionnaires. Your child will be observed while on the school playground. Once back in the classroom they will be asked to complete a questionnaire that asks the child how good they think they are at a number of illustrated playground activities and how important they feel those activities are. Completion of this questionnaire will take place once at the beginning of each week of study, and again at the very end of the 3 weeks. They will also be requested to complete a self-report form that invites them to circle all of the activities they did at that recess. This form will be completed following all recess periods during the weeks of the project. Enclosed is a sample of the illustrations found on the questionnaires and self-report forms. Depending on the information gathered, the researcher may wish to interview some children in order to discuss certain playground behaviours and reasons for participation. If you consent to your child possibly being interviewed please check the box at the bottom of the attached consent form. Information from this investigation may be presented at academic conferences, however the identity of your child will remain completely confidential.

To ensure confidentiality, the responses of your child will be coded and stored in a locked file cabinet to which only the investigators have access. Normally such information is retained for a period of five years post publication, after which it will be destroyed.

If you grant permission for your child's participation in this study, you or your child reserves the right to decline to continue and withdraw from the study without

consequence. Upon request, your child's information will be removed from the study. In order to withdraw, all you must do is notify one of the investigators listed on the consent form. If you have any questions or would like more information, please do not hesitate to contact Ms. Sarah Hilton, Dr. Brian Nielsen or Dr. Jane Watkinson.

Please indicate whether or not your child may take part in the following study by completing and returning the attached consent form in the next 2 to 3 days. If you decide to allow your child to participate, the investigator will add her signature in the space provided and return a photocopy to you. Thank you for your consideration.

The University of Alberta creates and collects information for the purposes of research and other activities directly related to its educational research programs. All participants in research projects are advised that the information they provide, and any other information gathered for research projects, will be protected and used in compliance with Alberta's Freedom of Information and Protection of Privacy Act.

Sincerely,

Sarah Hilton	Dr. Brian Nielsen	Dr. Jane Watkinson
(o) 492-5503 (h) 435-2480	(o) 492-3839 (h) 434-8596	(o) 492-5910

Consent Form

Project Title: Children's Perceived Competence and Participation in Recess Activities

Investigator:
Sarah Hilton, Graduate Student
Faculty of Physical Education and Recreation
University of Alberta
Edmonton, AB.
Phone: (b) 492-5503 (h) 435-2480

Co-Investigator:
Dr. Brian Nielsen, Professor
Faculty of Phys. Ed. and Rec.
University of Alberta
Edmonton, AB.
Phone: (b) 492-3839 (o) 434-8596

My signature on this sheet indicates that my child,_____, may participate in the research project indicated above. I understand the following aspects of this research project.

1) My child is a volunteer and can withdraw from this study at any time without fear of penalty or consequence. I may also withdraw my child at any time for any reason.

2) I have received an information sheet regarding the nature of this study, its purposes and procedures. I understand that I may ask questions at any time during the study and have them answered to my satisfaction.

3) The time involvement for each child will be approximately 5-10 minutes after each recess period over a total time frame of 3 weeks. These 3 weeks may not necessarily be consecutive, but possibly distributed throughout the fall in a pattern agreed upon by the teacher.

4) There is no risk of physical or psychological harm.

5) The individual information that my child provides will remain confidential from sources outside of the research team.

6) I will receive a summary of the project, upon request, following completion of the study.

7) I will receive a signed copy of this consent form after I send it in.

Signature of Parent _____ Date _____

☐ If you agree to allow your child to be interviewed by the researcher regarding activity choices at recess please show your consent by checking this box. (You may decline the interview process, but consent to involvement in all other phases of the study.)

☐ I have seen the material provided but do not wish to have my child participate.

☐ Please call me with further information. Phone #_____

Your child also has the opportunity to give his/her consent to participate by signing his/her name in the space below.

Signature of Child_____ Signature of Researcher_____

APPENDIX B

Activities of Daily Living - Physical Play (ADL – PP)

Perceptions of Competence Questionnaire

Perceived Importance Questionnaire

My name is: _____ *I am in grade:* _____

The name of my school is: _____

What did you do at recess today?

1.
swing on a swing

2.
stand on a swing

3.
swing with a partner

4.
underduck

5.
jump off a swing

6.
swing on a tire swing

7.
walk with a friend

8.
watch other kids play

9.
curl around a bar

10.
hang with arms

11.
hang upside down arms/knees

12.
slide down

13.
climb up a slide

14.
play on a tire

15.
climb up a ladder

16.
climb up/down a cargo net

17.
climb on equipment

18.
climb up/slide down a pole

19.
crawl through a tunnel

20.
monorail / zipline

21.
play a game with friends

22.
walk across an object (balance)

23.
talk with friends

24.
dance

25.
somersault

26.
headstand/ handstand

27.
carrousel

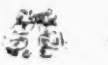
28.
wrestle

29.
jump

30.
jump over

31.
jump/ down

32.
leap frog

33. 
hand clapping games

34.
run

35.
tag chase

36.
skip

37.
walk with friends

38.
throw a ball against a wall

40.
play football

41.
play baseball

42.
catch a ball

43.
skate a line

44.
play soccer

45.
kick a ball

46.
play soccer-baseball

47.
play basketball

48.
bounce a ball

49.
play hockey

50.
play in the sand

51.
slide down a hill

52.
play in the snow

53.
build / play in a snow fort

54.
play snow games

Perceptions of Competence Questionnaire

HOW GOOD ARE YOU AT THIS SKILL?

	Really bad	Bad	OK	Good	Really good	Never tried it
	1	2	3	4	5	6

1. swing on a swing

2. stand on a swing

3. swing with a partner

4. underduck

5. jump off a swing

6. swing on a tire swing

7. walk with a friend

8. watch other kids play

9. curl around a bar

10. hang with arms

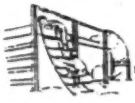
11. hang upside down arms/knees

12. slide down

13. climb up a slide

14. play on a tire

15. climb up a ladder

16.  climb up/down a cargo net

17. climb on equipment

18. climb up/slide down a pole

HOW GOOD ARE YOU AT THIS SKILL?

19.
crawl through a tunnel

20.
monorail / zipline

21.
play a game with friends

22.
walk across an object (balance)

23.
talk with friends

24.
dance

25.
somersault

26.
headstand/ handstand

27.
cartwheel

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

28.
wrestle

29.
jump

30.
jump over

31.
jump down

32.
leap frog

33.
hand clapping games

Really bad	Bad	OK	Good	Really good	Never tried
1	2	3	4	5	6

34.
run

35.
hopscotch

36.
skip

HOW GOOD ARE YOU AT THIS SKILL?

37.
skip with friends

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

38.
tag/chase

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

39.
throw a ball against a wall

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

40.
play football

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

41.
play baseball

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

42.
catch a ball

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

43.
throw a ball

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

44.
play soccer

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

45.
kick a ball

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

46.
play soccer-baseball

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

47.
play basketball

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

48.
bounce a ball

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

49.
play hockey

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

50.
play in the sand

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

51.
slide down a hill

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

52.
play in the snow

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

53.
build / play in a snow fort

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

54.
play snow games

Really bad	Bad	OK	Good	Really good	Never tried it
1	2	3	4	5	6

Perceived Importance Questionnaire

How important is it for you to be able to do these activities at recess?

1.
swing on a swing
Not at all important 1 2 3 4 5 Very important

2.
stand on a swing
Not at all important 1 2 3 4 5 Very important

3.
swing with a partner
Not at all important 1 2 3 4 5 Very important

4.
underduck
Not at all important 1 2 3 4 5 Very important

5.
jump off a swing
Not at all important 1 2 3 4 5 Very important

6.
swing on a tire swing
Not at all important 1 2 3 4 5 Very important

7.
walk with a friend
Not at all important 1 2 3 4 5 Very important

8.
watch other kids play
Not at all important 1 2 3 4 5 Very important

9.
curl around a bar
Not at all important 1 2 3 4 5 Very important

10.
hang with arms
Not at all important 1 2 3 4 5 Very important

11.
hang upside down arms/knees
Not at all important 1 2 3 4 5 Very important

12.
slide down
Not at all important 1 2 3 4 5 Very important

13.
climb up a slide
Not at all important 1 2 3 4 5 Very important

14.
play on a tire
Not at all important 1 2 3 4 5 Very important

15.
climb up a ladder
Not at all important 1 2 3 4 5 Very important

16.
climb up/down a cargo net
Not at all important 1 2 3 4 5 Very important

Name: _____

Grade: _____

School: _____

How important is it for you to be able to do these activities at recess?

17.
climb on equipment

18.
climb up/slide down a pole

19.
crawl through a tunnel

20.
monorail / zipline

21.
play a game with friends

22.
walk across an object (balance)

23.
talk with friends

24.
dance

25.
somersault

26.
headstand/ handstand

	Not at all important				Very important
	1	2	3	4	5

27.
cartwheel

28.
wrestle

29.
jump

30.
jump over

31.
jump down

32.
leap frog

33.
hand clapping games

34.
run

35.
hopscotch

36.
skip

How important is it for you to be able to do these activities at recess?

37.
skip with friends

38.
tag/chase

39.
throw a ball against a wall

40.
play football

41.
play baseball

42.
catch a ball

43.
throw a ball

44.
play soccer

45.
kick a ball

46.
play soccer-baseball

Not at all important 1 2 3 4 5 Very important

47.
play basketball

48.
bounce a ball

49.
play hockey

50.
play in the sand

51.
slide down a hill

52.
build / play in a snow fort

53.
play in the snow

54.
play snow games